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JOHN MAYNARD KEYNES
1883–1946

By JOSEPH A. SCHUMPETER*

I

In his sparkling essay on the Great Villiers Connection,[1] Keynes revealed a sense of the importance of hereditary ability—of the great truth, to use Karl Pearson's phrase, that ability runs in stocks—that fits but ill into the picture many people seem to harbor of his intellectual world. The obvious inference about his sociology is strengthened by the fact that in his biographical sketches he was apt to stress ancestral backgrounds with unusual care. He would therefore understand my regret at my inability, owing to lack of time, to probe into the past of the Keynes Connection. Let us hope that someone else will do this, and content ourselves with an admiring glance at the parents. He was born on the fifth of June, 1883, the eldest son of Florence Ada Keynes, daughter of the Reverend John Brown, D.D., and of John Neville Keynes, Registrar of the University of Cambridge—a mother of quite exceptional ability and charm, one-time mayor of Cambridge, and a father who is known to all of us as an eminent logician and author, among other things, of one of the best methodologies of economics ever written.[2]

Let us note the academic-clerical background of the subject of this memoir. The implications of this background—both the eminently English quality of it and the gentry element in it—become still clearer when we add two names: Eton and King's College, Cambridge. Most of us are teachers, and teachers are prone to exaggerate the formative influence of education. But nobody will equate it to zero. Moreover, there is

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[1] The essay, a review of W. I. J. Gun, *Studies in Hereditary Ability*, was published in *The Nation and Athenaeum*, March 27, 1926, and has been reprinted in the volume *Essays in Biography*, 1933. This volume sheds more light on Keynes the man and Keynes the scholar than does any other publication of his. I shall accordingly refer to it more than once.

[2] *Scope and Method of Political Economy* (1891). The well-earned success of this admirable book is attested by the fact that a reprint of its fourth edition (1917) was called for as late as 1930: in fact, so well has it kept its own amidst the surf and breakers of half a century's controversies about its problems that even now students of methodology can hardly do better than choose it for guide.

nothing to show that John Maynard's reaction to either place was anything but positive. He seems to have enjoyed a thoroughly successful scholastic career.[3] In 1905 he was elected President of the Cambridge Union. In the same year he emerged as twelfth Wrangler.

Theorists will notice the latter distinction which cannot be attained without some aptitude for mathematics plus hard work—work hard enough to make it easy for a man who has gone through that discipline to acquire any more advanced technique he may wish to master. They will recognize the mathematical quality of mind that underlies the purely scientific part of Keynes's work, perhaps also the traces in it of a half-forgotten training. And some of them may wonder why he kept aloof from the current of mathematical economics which gathered decisive momentum at just about the time when he first entered the field. Nor is this all. Though never definitely hostile to mathematical economics—he even accepted the presidency of the Econometric Society—he never threw the weight of his authority into its scale. The advice that emanated from him was almost invariably negative. Occasionally his conversation revealed something akin to dislike.

Explanation is not far to seek. The higher ranges of mathematical economics are in the nature of what is in all fields referred to as "pure science." Results have little bearing—as yet, in any case—upon practical questions. And questions of policy all but monopolized Keynes's brilliant abilities. He was much too cultivated and much too intelligent to despise logical niceties. To some extent he enjoyed them; to a still greater extent he bore with them; but beyond a boundary which it did not take him long to reach, he lost patience with them. *L'art pour l'art* was no part of his scientific creed. Wherever else he may have been progressive, he was not a progressive in analytic method. We shall see that this also holds in other respects that are unconnected with the use of higher mathematics. If the purpose seemed to justify it, he had no objection to using arguments that were as crude as those of Sir Thomas Mun.

II

An Englishman who entered adult life from Eton and Cambridge, who was passionately interested in the policy of his nation, who had conquered the presidential chair of the Cambridge union in the symbolic year 1905 that marked the passing of an epoch and the dawn of another[4] —why did such an Englishman not embark upon a political career? Why did he go to the India Office instead? Many pro's and con's enter

[3] Eton always meant much to him. Few of the honors of which he was the recipient later on pleased him so much as did his election, by the masters, as their representative on Eton's governing board.

[4] The Campbell-Bannerman victory was won and a parliamentary Labor Party emerged in January, 1906.

into a decision of this kind, money among others, but there is one point about it which it is essential to grasp. Nobody could ever have talked to Keynes for an hour without discovering that he was the most unpolitical of men. The political game as a game interested him no more than did racing—or, for that matter, pure theory *per se*. With quite unusual gifts for debate and with a keen perception of tactical values, he yet seems to have been impervious to the lure—nowhere anything like as strong as it is in England—of the charmed circle of political office. Party meant little or nothing to him. He was ready to coöperate with anyone who offered support for a recommendation of his and to forget any past passage of arms. But he was not ready to coöperate with anyone on any other terms, let alone to accept anyone's leadership. His loyalties were loyalties to measures, not loyalties to individuals or groups. And still less than a respector of persons was he a respector of creeds or ideologies or flags.

Was he not, therefore, cut out for the rôle of an ideal civil servant, by nature made to become one of those great permanent Under-secretaries of State whose discreet influence counts for so much in the shaping of England's recent history? Anything but that. He had no taste for politics, but he had less than no taste for patient routine work and for breaking in, by gentle arts, that refractory wild beast, the politician. And these two negative propensities, the aversion to the political arena and the aversion to red tape, propelled him toward the rôle for which he was indeed by nature made, for which he quickly found the form that suited him to perfection, and from which he never departed throughout his life. Whatever we may think of the psychological laws which he was to formulate, we cannot but feel that, from an early age, he thoroughly understood his own. This is, in fact, one of the major keys to the secret of his success—and also to the secret of his happiness: for unless I am much mistaken his life was an eminently happy one.

Thus, after two years at the India Office (1906–08) he went back to his university, accepting a fellowship at King's (1909), and quickly established himself in the circle of his Cambridge fellow economists and beyond. He taught straight Marshallian doctrine with the Fifth Book of the *Principles* as the center, the doctrine that he mastered as few people did and with which he remained identified for twenty years to come. A picture survives in my memory of how he then looked to a casual visitor to Cambridge—the picture of the young teacher of spare frame, ascetic countenance, flashing eyes, intent and tremendously serious, vibrating with what seemed to that visitor suppressed impatience, a formidable controversialist whom nobody could overlook, everybody respected, and some liked.[5] His rising reputation is attested by the fact

[5] My own acquaintance with Keynes, productive of a totally different impression, dates only from 1927.

that as early as 1911 he was appointed editor of the *Economic Journal* in succession to its first editor, Edgeworth. This key position in the world of economics he filled without interruption and with unflagging zeal until the spring of 1945.[6] Considering the length of his tenure of this office and all the other interests and avocations in the midst of which he filled it, his editorial performance is truly remarkable, in fact, almost unbelievable. It was not only that he shaped the general policy of the *Journal* and of the Royal Economic Society, of which he was secretary. He did much more than this. Many articles grew out of his suggestions; all of them received, from the ideas and facts presented down to punctuation, the most minute critical attention.[7] We all know the results, and everyone of us has—no doubt—his own opinion about them. But I feel confident of speaking for all of us when I say that, taken as a whole, Keynes the editor has had no equal since Du Pont de Nemours managed the *Ephémérides*.

The work at the India Office was not more than an apprenticeship that would have left few traces in a less fertile mind. It is highly revealing not only of the vigor but also of the type of Keynes's talent that it bore fruit in his case: his first book—and first success— was on *Indian Currency and Finance*.[8] It appeared in 1913, when he was also appointed member of the Royal Commission on Indian Finance and Currency (1913–14). I think it fair to call this book the best English work on the gold exchange standard. Much more interest attaches, however, to another question that is but distantly related to the merits of this performance taken by itself; can we discern in it anything that points toward the *General Theory?* In the Preface to the latter, Keynes himself claimed not more than that his teaching of 1936 seemed to him "a natural evolution of a line of thought which he had been pursuing for several years." On this I shall offer some comments later on. But now I will make bold to assert that, though the book of 1913 contains none of those characteristic propositions of the book of 1936 that have been felt to be so "revolutionary," the general attitude taken toward monetary phenomena and monetary policy by the Keynes of 1913 clearly foreshadowed that of the Keynes of the *Treatise* (1930).

Monetary management was then no novelty, of course—which is precisely why it should not have been heralded as a novelty in the 20's

[6] Edgeworth served once more, as joint editor, 1918–1925. He was succeeded by D. H. Macgregor, who served, 1925–1934, to be in turn succeeded by Mr. E. A. G. Robinson (who had been appointed assistant editor in 1933).

[7] Once he patiently explained to a foreign contributor that, while it is permissible to abbreviate *exempli gratia* into *e.g.*, it is not permissible to abbreviate "for instance" into *f. i.*—and would the author sanction the alteration?

[8] In 1910–11 he gave lectures on Indian Finance at the London School of Economics. See F. A. Hayek, "The London School of Economics, 1895–1945," *Economica* (Feb., 1946), p. 17.

and 30's—and preoccupation with Indian problems was particularly likely to induce awareness of its nature, necessity, and possibilities. But Keynes's vivid appreciation of its bearing not only upon prices and exports and imports, but also on production and employment was nevertheless something new, something that, if it did not uniquely determine, yet conditioned his own line of advance. Moreover, we must remember how closely his *theoretical* development in post-war times was related to the particular situations in which he offered practical advice and which neither he nor anyone else foresaw in 1913: add the theoretical implications of the English experience in the 20's to the theory of *Indian Currency and Finance*, and you will get the substance of the Keynesian ideas of 1930. This statement is conservative. I could go further—a little—were I not afraid of falling into an error that is very common among biographers.

III

In 1915, the potential public servant in the academic gown turned into an actual one: he entered the Treasury. English finance during the First World War was eminently "sound" and spelled a moral performance of the first order. But it was not conspicuous for originality, and it is possible that the brilliant young official then acquired his dislike of the Treasury Mind and the Treasury View that became so marked later on. His services were, however, appreciated, for he was chosen to serve as Principal Representative of the Treasury at the Peace Conference—which might have been a key position if such a thing could have existed within the orbit of Lloyd George—and also as Deputy for the Chancellor of the Exchequer on the Supreme Economic Council. More important than this, speaking from the biographer's standpoint, is his abrupt resignation in June, 1919, which was so characteristic of the man and of the kind of public servant he was. Other men had much the same misgivings about the peace, but *of course* they could not possibly speak out. Keynes was made of different stuff. He resigned and told the world why. And he leapt into international fame.

The *Economic Consequences of the Peace* (1919) met with a reception that makes the word Success sound commonplace and insipid. Those who cannot understand how luck and merit intertwine will no doubt say that Keynes simply wrote what was on every sensible man's lips; that he was very favorably placed for making his protest resound all over the world; that it was this protest as such and not his particular argument that won him every ear and many thousands of hearts; and that, at the moment the book appeared, the tide was already running on which it was to ride. There is truth in all this. Of course, there was an unique opportunity. But if we choose, on the strength of this, to deny the greatness of the feat, we had better delete this phrase altogether

from the pages of history. For there are no great feats without preëxisting great opportunities.

Primarily the feat was one of moral courage. But the book is a masterpiece—packed with practical wisdom that never lacks depth; pitilessly logical yet never cold; genuinely humane but nowhere sentimental; meeting all facts without vain regrets but also without hopelessness: it is sound advice added to sound analysis. And it is a work of art. Form and matter fit each other to perfection. Everything is to the point, and there is nothing in it that is not to the point. No idle adornment disfigures its wise economy of means. The very polish of the exposition—never again was he to write so well—brings out its simplicity. In the passages in which Keynes tries to explain, in terms of the *dramatis personae*, the tragic failure of purpose that produced the Peace, he rises to heights that have been trodden by few.[9]

The economics of the book, as well as of *A Revision of the Treaty* (1922) that complements and in some respects amends its argument, is of the simplest and did not call for any refined technique. Nevertheless, there is something about it that calls for our attention. Before embarking on his great venture in persuasion, Keynes drew a sketch of the economic and social background of the political events he was about to survey. With but slight alterations of phrasing, this sketch may be summed up like this: *Laissez-faire* capitalism, that "extraordinary episode," had come to an end in August, 1914. The conditions were rapidly passing in which entrepreneural leadership was able to secure success after success, propelled as it had been by rapid growth of populations and by abun-

[9] See pp. 26–50, on the Council of Four, republished, with an important addendum, the Fragment on Lloyd George, in the *Essays in Biography*. It is painful to report that, at the time, some opponents of Keynes's views, in full retreat before his victorious logic, seem to have resorted to sneers about his presentation of certain facts and his interpretation of motive, neither of which, so they averred, he was in a position to judge. Since this indictment of Keynes's veracity has been repeated recently in a *causerie* published in an American magazine, it is first of all necessary to ask the reader to satisfy himself that not a single result of Keynes's analysis and not a single recommendation of his depends on the correctness or incorrectness of the picture he drew of the motives and attitudes of Clemenceau, Wilson, and Lloyd George. But, secondly, since it is part of the purpose of this memoir to delineate a character, it is further necessary to prove that there is absolutely no foundation for the aspersion that Keynes indulged in a flight of "poetic fantasy" and that he pretended to an intimate knowledge of "arcana" that cannot have been known to him—which, at best, would convict him of petty vanity and, at worst, of more than that. But the proof in question is not difficult to supply. If the reader will refer to that masterly sketch, as I hope he will, he is bound to find that Keynes claimed no intimacy with those three men and personal acquaintance only with Lloyd George. He said nothing about the private meetings of the four (the fourth was Orlando), but merely described scenes at the regular meetings of the Council of Four, which, along with all other leading experts, he must have normally attended in his official capacity. Moreover, his presentation of the personal aspects of the steps on the road that led to the disastrous result is amply supported by independent evidence: his brilliant story is nothing but a reasonable interpretation of a course of events that is common knowledge. Finally, critics had better bear in mind that this interpretation is distinctly generous and perfectly free from traces of any resentment, however justifiable, that Keynes may have felt.

dant opportunities to invest that were incessantly recreated by technological improvements and by a series of conquests of new sources of food and raw materials. Under these conditions, there had been no difficulty about absorbing the savings of a *bourgeoisie* that kept on baking cakes "in order not to eat them." But now (1920) those impulses were giving out, the spirit of private enterprise was flagging, investment opportunities were vanishing, and bourgeois saving habits had, therefore, lost their social function; their persistence actually made things worse than they need have been.

Here, then, we have the origin of the *modern* stagnation thesis—as distinguished from the one which we may, if we choose, find in Ricardo. And here we also have the embryo of the *General Theory*. Every comprehensive "theory" of an economic state of society consists of two complementary but essentially distinct elements. There is, first, the theorist's view about the basic features of that state of society, about what is and what is not important in order to understand its life at a given time. Let us call this his vision. And there is, second, the theorist's technique, an apparatus by which he conceptualizes his vision and which turns the latter into concrete propositions or "theories." In those pages of the *Economic Consequences of the Peace* we find nothing of the theoretical apparatus of the *General Theory*. But we find the whole of the vision of things social and economic of which that apparatus is the technical complement. The *General Theory* is the final result of a long struggle *to make that vision of our age analytically operative.*

IV

For economists of the "scientific" type Keynes is, of course, the Keynes of the *General Theory*. In order to do some justice to the straight-line development which leads up to it from the *Consequences of the Peace*, and of which the main stages are marked by the *Tract* and by the *Treatise*, I shall have to brush aside ruthlessly many things that ought not to go unrecorded. Three foothills of the *Consequences* are, however, mentioned in the note below,[10] and a few words must be said on *A*

[10] These are: his article on population and the ensuing controversy with Sir William Beveridge (*Econ. Jour.*, 1923); his pamphlet, *The End of Laissez-Faire* (1926); and his article on the "German Transfer Problem" in the *Econ. Jour.* (March, 1929), with subsequent replies to the criticism of Ohlin and Rueff. The first attempts to conjure Malthus's ghost—to defend (at the threshold of the period of unsalable masses of food and raw materials!) the thesis that, since somewhere about 1906, nature had begun to respond less generously to human effort and that overpopulation was the great problem, or one of the great problems of our time: perhaps the least felicitous of all his efforts and indicative of an element of recklessness in his makeup which those who loved him best cannot entirely deny. All that needs to be said about *The End of Laissez-Faire* is that we must not expect to find in this piece of work what the title suggests. It was not at all what the Webbs wrote in that book of theirs that invites comparison with Keynes's. The article on German reparations reveals another side of his character: it was evidently dictated by the most generous motives and by unerring political wisdom; but it was

Treatise on Probability which he published in 1921. There cannot be, I fear, much question about what Keynes means for the theory of probability, though his interest in it went far back: his fellowship dissertation had been on the subject. The question that is of interest to us is what the theory of probability meant for Keynes. Subjectively, it seems to have been an outlet for the energies of a mind that found no complete satisfaction in the problems of the field to which, as much from a sense of public duty as from taste, he devoted most of his time and strength. He entertained no very high opinion about the purely intellectual possibilities of economics. Whenever he wished to breathe the air of high altitudes, he did not turn to our pure theory. He was something of a philosopher or epistemologist. He was interested in Wittgenstein. He was a great friend of that brilliant thinker who died in the prime of life —Frank Ramsey, to whose memory he erected a charming monument.[11] But no merely receptive attitude could have satisfied him. He had to have a flight of his own. It is highly revelatory of the texture of his mind that he chose probability for the purpose—a subject bristling with logical niceties yet not entirely without utilitarian connotation. His indomitable will produced what, seen as I am trying to see it, was no doubt a brilliant performance, whatever specialists, non-Cambridge specialists particularly, might have to say about it.

We are drifting from the work to the man. Let us then use this opportunity for looking at him a little more closely. He had returned to King's and to his pre-war pattern of life. But the pattern was developed and enlarged. He continued to be an active teacher and research worker; he continued to edit the *Journal;* he continued to make the public cares his own. But though he strengthened his ties with King's by accepting the important (and laborious) function of Bursar, the London house, at 46 Gordon Square, became second headquarters before long. He acquired an interest in, and became chairman of, *The Nation*—which superseded the *Speaker* in 1921, absorbed the *Athenaeum*, and was, in 1931, merged with *The New Statesman* (*The New Statesman and Nation*) —to which he directed a current stream of articles that would have been full-time work for some other men. Also, he became chairman of the

not good theory and Ohlin and Rueff found it easy to deal with it. It is difficult to understand how Keynes can have been blind to the weak spots in his argument. But, in the service of a cause he believed in, he would sometimes, in noble haste, overlook defects in the wood from which he made his arrows. Perusal of the collection entitled *Essays in Persuasion* (1931), is perhaps the best method of studying the quality of his reasoning in the not-quite-professional part of his work.

[11] In *The New Statesman and Nation*, October 3, 1931, republished in the *Essays in Biography*. To this essay, the most warm-hearted thing he ever wrote, is appended an anthology of gleanings from Ramsey's notes. These express Ramsey's views, of course, and not Keynes's, but, for an occasion like this, nobody would choose passages that do not strike a sympathetic note. Thus, Ramsey's sayings become indicative of Keynes's philosophy.

National Mutual Life Assurance Society (1921–38) to which he gave much time, and managed an investment company, earning a considerable income from such business pursuits. There was no nonsense about him, in particular no nonsense about business and money making: he frankly appreciated the comforts of a proper establishment; and not less frankly he used to say (in the 20's) that he would never accept a professorial appointment because he could not afford to do so. In addition to all this, he served actively on the Economic Advisory Council and on the Committee on Finance and Industry (Macmillan Committee). In 1925, he married a distinguished artist, Lydia Lopokova, who proved a congenial companion and devoted helpmate—"in sickness and in health"—to the end.

That combination of activities is not unusual. What made it unusual and, indeed, a marvel to behold is the fact that he put as much energy in each of them as if it had been his only one. His appetite and his capacity for efficient work surpass belief, and his power of concentration on the piece of work in hand was truly Gladstonian: whatever he did, he did with a mind freed from everything else. He knew what it is to be tired. But he hardly seems to have known dead hours of cheerlessness and faltering purpose.

Nature is wont to impose two distinct penalties upon those who try to beat out their stock of energy to the thinnest leaf. One of these penalties Keynes undoubtedly paid. The quality of his work suffered from its quantity and not only as to form: much of his secondary work shows the traces of haste, and some of his most important work, the traces of incessant interruptions that injured its growth. Who fails to realize this—to realize that he beholds work that has never been allowed to ripen, has never received the last finishing touch—will never do justice to Keynes's powers.[12] But the other penalty was remitted to him.

In general, there is something inhuman about human machines that fully use every ounce of their fuel. Such men are mostly cold in their personal relations, inaccessible, preoccupied. Their work is their life, no other interests exist for them, or only interests of the most superficial kind. But Keynes was the exact opposite of all this—the pleasantest fellow you can think of; pleasant, kind, and cheerful in the sense in which precisely those people are pleasant, kind, and cheerful who have

[12] The most obvious example for this is his most ambitious venture in research, the *Treatise on Money*, which is a shell of several pieces of powerful but unfinished work, very imperfectly put together (see below, p. 507). But the instance that will convey my meaning best is the biographical essay on Marshall (*Econ. Jour.*, Sept., 1924). He evidently lavished love and care upon it. As a matter of fact, it is the most brilliant life of a man of science I have ever read. And yet, the reader who turns to it will not only derive much pleasure and profit, but also see what I mean. It starts beautifully, it ends beautifully; but in order to be perfect, it would have needed another fortnight's work.

nothing on their minds and whose one principle it is never to allow any pursuit of theirs to degenerate into work. He was affectionate. He was always ready to enter with friendly zest into the views, interests, and troubles of others. He was generous, and not only with money. He was sociable, enjoyed conversation, and shone in it. And, contrary to a widely spread opinion, he could be *polite*, polite with an old-world *punctilio* that costs time. For instance, he would refuse to sit down to his lunch, in spite of telegraphic and telephonic expostulation, until his guest, delayed by fog in the Channel, put in appearance at 4 p.m.

His extracurricular interests were many, and each of them he pursued with joyful alacrity. But this is not all of it. Once more, people are not uncommon who, in spite of absorbing avocations, enjoy some recreative activities in a passive way. The Keynesian touch is that with him recreation was creative. For instance, he loved old books, niceties of bibliographic controversy, details of the characters, lives, and thoughts of men of the past. Many people share this taste which may have been fostered in him by the classical ingredients in his education. But whenever he indulged it, he took hold like the workman he was, and we owe to his hobby several not unimportant clarifications on points of literary history.[13] He also was a lover and, up to a point, a good judge of pictures, to a modest extent also a collector. He thoroughly enjoyed a good play, and founded and generously financed the Cambridge Arts Theatre, which no one who went to it will forget. And, once upon a time, an acquaintance of his received the following note from him, evidently dashed off in high good humor: "Dear . . . , if you wish to know what at the moment *exclusively* occupies my time, look at the enclosed."[14] The enclosure consisted of a program or prospectus of the "Carmago Ballet."

V

I return to the highway. As stated above, our first stop is at the *Tract on Monetary Reform* (1923). Since, with Keynes, practical advice was the goal and beaconlight of analysis, I will do what in the case of other economists I should consider an offense to do, *viz.*, invite readers to look first at what it was he advocated. It was, in substance, stabilization of

[13] The literature of philosophy and economics attracted him most. In this pursuit Professor Piero Sraffa became to him a much-appreciated ally. The best example I can offer of results is the edition of Hume's abstract of his *Treatise on Human Nature* "reprinted with an Introduction by J. M. Keynes and P. Sraffa," 1938. The Introduction is a curious monument of philological ardor.

[14] The acquaintance, a most disorderly person, does not keep letters. The exact wording of Keynes's note can therefore not be verified. But I am positive that it contained a single brief sentence and that the import of this sentence was as stated. It must have been about ten or fifteen years ago, perhaps more.—In his last years, those artistic activities and tastes led to his being elected trustee of the National Gallery and Chairman of the Council for the Encouragement of Music and the Arts. More work!

the domestic price level for the purpose of stabilizing the domestic business situation, secondary attention being paid also to the means of mitigating short-run fluctuations of foreign exchange. In order to achieve this he recommended that the monetary system created by the necessities of warfare should be carried over into the peace economy, the boldest of the various suggestions offered—with an evident trepidation quite unlike him—being the separation of the note issue from the gold reserve which he wished, however, to retain and of which he was anxious to emphasize the importance.

There are two things in this piece of advice that should be carefully noticed: first, its specifically English quality; second, ex visu *of England's short-run interests and of the kind of Englishman the adviser was*, its sober wisdom and conservativism.[15] It cannot be emphasized too strongly that Keynes's advice was in the first instance always English advice, born of English problems even where addressed to other nations. Barring some of his artistic tastes, he was surprisingly insular, even in philosophy, but nowhere so much as in economics. And, he was fervently patriotic—of a patriotism which was indeed quite untinged by vulgarity but was so genuine as to be subconscious and therefore all the more powerful to impart a bias to his thought and to exclude full understanding of foreign (also American) viewpoints, conditions, interests, and especially creeds. Like the old free-traders, he always exalted what was at any moment truth and wisdom for England into truth and wisdom for all times and places.[16] But we can not stop at this. In order to locate the standpoint from which his advice was given it is further necessary to remember that he was of the high intelligentsia of England, unattached to class or party, a typical pre-war intellectual, who rightly claimed, for good and ill, spiritual kinship with the Locke-Mill connection.

What was it, then, that this patriotic English intellectual beheld? The generalization we have already noticed in the pages of the *Consequences*. But England's case was more specific than that. She had not emerged from the war as she had emerged from the war of the Napoleonic era. She had emerged impoverished; she had lost many of her opportunities for the moment and some of them for good. Not only this, but her social fabric had been weakened and had become rigid. Her taxes and wage rates were incompatible with vigorous development, yet there was nothing that could be done about it. Keynes was not given to vain regrets. He was not in the habit of bemoaning what could not be changed. Also he was not the sort of man who would bend the full force of his mind to the individual problems of coal, textiles, steel, shipbuilding

[15] It should surprise no one that he was eventually (1942) elected director of the Bank of England.

[16] This also explains what his opponents called his inconsistency.

(though he did offer some advice of this kind in his current articles). Least of all was he the man to preach regenerative creeds. He was the English intellectual, a little *deraciné* and beholding a most uncomfortable situation. He was childless and his philosophy of life was essentially a short-run philosophy. So he turned resolutely to the only "parameter of action" that seemed left to him, both as an Englishman and as the kind of Englishman he was—monetary management. Perhaps he thought that it might heal. He knew for certain that it would sooth—and that return to a gold system at pre-war parity was more than *his* England could stand.

If only people could be made to understand this, they would also understand that practical Keynesianism is a seedling which cannot be transplanted into foreign soil: it dies there and becomes poisonous before it dies. But in addition they would understand that, left in English soil, this seedling is a healthy thing and promises both fruit and shade. Let me say once and for all: all this applies to every bit of advice that Keynes ever offered. For the rest, the advocacy of monetary management in the *Tract* was anything but revolutionary. There was, however, a novel emphasis on it as a means of general economic therapeutics. And concern with the saving-investment mechanism is indicated in the first lines of the Preface and throughout the first chapter.[17] Thus, though the immediate task before the author prevented him from going very far into these matters, the book does indicate further advance toward the *General Theory*.

Analytically, Keynes accepted the quantity theory which "is fundamental. Its correspondence with facts is not open to question" (p. 81). All the more important is it for us to realize that this acceptance, resting as it does on the very common confusion between the quantity theory and the equation of exchange, meant much less than it seems to mean exactly as Keynes's later repudiation of the quantity theory means much less than it seems to mean. What he intended to accept was the equation of exchange—in its Cambridge form—which, whether defined as an identity or as an equilibrium condition, does not imply any of the propositions characteristic of the quantity theory in the strict sense. Accordingly, he felt free to make velocity—or k, its equivalent in the Cambridge equation—a variable of the monetary problem, very properly giving Marshall credit for this "development of the traditional way of considering the matter" (p. 86). This is the Liquidity Preference in embryonic form. Keynes overlooked that this theory can be traced back

[17] See, *e. g.*, the highly characteristic passages on p. 10, and also the description of the "investment system" on p. 8, which anticipates some of the very inadequacies of the analysis of the *General Theory*. Even then, and indeed from first to last, Keynes displayed a curious reluctance to recognize a very simple and obvious fact and to express it by the no less simple and obvious phrase, that typically industry is financed by banks.

to Cantillon—at least—and that it had been developed, though sketchily, by Kemmerer,[18] who said that "large sums of money are continually being hoarded" and that "the proportion of the circulating medium which is hoarded . . . is not constant." We cannot go into the many excellent things in the *Tract*, *e.g.*, the masterly section on the Forward Market in Exchanges (Chap. III, sec. IV) and on Great Britain (Chap. V, sec. I) which it is impossible to admire too highly. We must hurry on to our "second stop" on the road to the *General Theory*, the *Treatise on Money* (1930).

With the exception of the *Treatise on Probability*, Keynes never wrote another work in which the hortatory purpose is less visible than it is in the *Treatise on Money*. It is there all the same, and not confined to the last book (VII), in which, among other things, we find all the essentials of Bretton Woods—what an extraordinary achievement! Primarily, however, those two volumes are no doubt Keynes's most ambitious piece of genuine research, of research so brilliant and yet so solid that it is a thousand pities that the harvest was garnered before it was ripe. If only he had learned something from Marshall's craving for "impossible perfection" instead of lecturing him about it! (*Essays in Biography*, pp. 211–12).[19] Moreover, Professor Myrdal's gentle sneer at "that Anglo-Saxon kind of unnecessary originality" is amply justified.[20] Nevertheless, the book was the outstanding performance in its field and day. All I can do, however, is to collect the most important signposts that point toward the *General Theory*.[21]

[18] E. W. Kemmerer, *Money and Credit Instruments* (1907), p. 20. But on p. 193 of the *Tract*, Keynes commits himself to the untenable statement that "the internal price level is mainly determined by the amount of credit created by the banks" and from this he never departed. To the end, this credit remained for him an independent variable, given to the economic process, though determined, not by gold production as it was of old but either by the banks or by the "monetary authority" (Central Bank or Government). This, however—considering quantity of money as "given"—is one of the characteristic features of the quantity theory in the strict sense. Hence my statement in the text that he never abandoned the quantity theory as completely as he thought he did.

[19] A semi-apologetic passage in the Preface of the *Treatise* shows that he was not unaware of the fact that he was offering half-baked bread.

[20] Gunnar Myrdal, *Monetary Equilibrium* (English tranlsation, by Bryce and Stolper [1939], of a German version of the Swedish original that appeared in the *Ekonomisk Tidskrift* in 1931), p. 8. Myrdal's protest was not, of course, made on his own behalf but on behalf of Wicksell and the Wicksellian group. But a similar protest would have been in order on behalf of Böhm-Bawerk and his followers, especially of Mises and Hayek. The latter's *Geldtheorie und Konjunkturtheorie* had been published, it is true, only in 1929. But Böhm-Bawerk's work was available in English, and Taussig's *Wages and Capital* dates from 1896. Nevertheless, Keynes wrote the capital theory of Book VI exactly as if they had never lived. But there was no obliquity in this. He simply did not know. Proof of his good faith is the ample credit he gave to all authors he did know, Pigou and Robertson among them.

[21] This, of course, involves injustice to the work as a whole, and in particular to the first two books: the conventional but nonetheless brilliant introduction (Nature of Money, Book I) and the almost independent treatise on price levels (Value of Money, Book II) which is full

There is, first, the conception of the theory of money as the theory of the economic process as a whole that was to be fully developed in the *General Theory*. This conception is, second, embedded in the vision or diagnosis of the contemporaneous state of the economic process that never changed from the *Consequences*. Third, saving and investment decisions are resolutely separated, quite as resolutely as in the *General Theory*, and private thrift is well established in its rôle of villain of the piece. The recognition extended to the work of "Mr. J. A. Hobson and others" (Vol. I, p. 179) is highly significant in this respect. And we learn that a thrift campaign is not the way to bring down the rate of interest (*e.g.*, Vol. II, p. 207). Differences in conceptualization—sometimes only in terminology—obscure but do not eliminate the fundamental identity of the ideas the author strives to convey. Thus, fourth, much of the argument runs in terms of the Wicksellian divergence between the "natural" and the "money" rate of interest. To be sure, the latter is not yet *the* rate of interest, and neither the former nor profits are as yet turned into the "marginal efficiency of capital." But the argument clearly suggests both steps. Fifth, the emphasis upon expectations, upon the "bearishness" that is not yet liquidity preference from the speculative motive, and the theory that the fall in money wage rates in depression ("reduction in the rate of efficiency-earnings") will tend to reëstablish equilibrium *if and because it will act on interest* (*bank rate*) *by reducing the requirements of Industrial Circulation*—all these and many other things (bananas, widows' cruses, Danaïdes' jars) read like imperfect and embarrassed first statements of *General Theory* propositions.

VI

The *Treatise* was not a failure in any ordinary sense of the word. Everybody saw its points and, with whatever qualifications, paid his respects to Keynes's great effort. Even damaging criticism, such as Professor Hansen's criticism of the Fundamental Equations,[22] or Professor von Hayek's criticism of Keynes's basic theoretical structure,[23] were as a rule tempered with well-deserved eulogy. But from Keynes's own standpoint it was a failure, and not only because its reception did not

of suggestive ideas. It must be remembered—and this is really the most fundamental difference between the *Treatise* and the *General Theory*—that the work professes to be an analysis of the dynamics of price levels, "of the way in which the fluctuations of the price level actually come to pass" (Vol. I, p. 152), though in reality it is much more than this.

[22] Alvin H. Hansen, "A Fundamental Error in Keynes' Treatise on Money," this *Review*, 1930; and Hansen and Tout, "Investment and Saving in Business Cycle Theory," *Econometrica*, 1933.

[23] F. A. von Hayek, "Reflections on the Pure Theory of Money of Mr. Keynes," I and II, *Economica*, 1931 and 1932. Hayek went so far as to speak of an "enormous advance." Nevertheless Keynes replied not without irritation. As he himself remarked on another occasion, authors are difficult to please.

measure up to his standard of success. It had somehow missed fire—it had not really made a mark. And the reason was not far to seek: he had failed to convey the essence of his own personal message. He had written a treatise and, for the sake of systematic completeness, overburdened his text with material about price indices, the ***modus operandi*** of bank rates, deposit creation, gold and what not all of which, whatever its merits, was akin to current doctrine and hence, for his purpose, not sufficiently distinctive. He had entangled himself in the meshes of an apparatus that broke down each time he attempted to make it grind out his own meanings. There would have been no point in trying to improve the work in detail. There would have been no point in trying to fight criticisms, the justice of many of which he had to admit. There was nothing for it but to abandon the whole thing, hull and cargo, to renounce allegiances and to start afresh. He was quick to learn the lesson.

Resolutely cutting himself off from the derelict, he braced himself for another effort, the greatest of his life. With brilliant energy he took hold of the essentials of his message and bent his mind to the task of forging a conceptual apparatus that would express these and—as nearly as possible—nothing else. He succeeded to his satisfaction. And so soon as he had done so—in December, 1935—he buckled on his new armor, unsheathed his sword and took the field again, boldly claiming that he was going to lead economists out of errors of 150 years' standing and into the promised land of truth.

Those around him were fascinated. While Keynes was remodeling his work, he currently talked about it in his lectures, in conversation, in the "Keynes Club" that used to meet in his rooms at King's. And there was a lively give and take. " . . . I have depended on the constant advice and constructive criticism of Mr. R. F. Kahn. There is a great deal in this book which would not have taken the shape it has except at his suggestion" (*General Theory*, Preface, p. viii). Considering all the implications of Richard Kahn's article on "The Relation of Home Investment to Unemployment," published in the *Economic Journal* as early as June, 1931, we shall certainly not suspect those two sentences of overstatement. Some credit was also given, in the same place, to Mrs. Robinson, Mr. Hawtrey, and Mr. Harrod.[24] There were others—some

[24] Mr. Hawtrey's relation to the book can never have been any other than that of an understanding and, up to a point, sympathetic critic. He never was, of course, a Keynesian. From the *Tract* to the *Treatise*, Keynes was a Hawtreyan. Mr. Harrod may have been moving independently toward a goal not far from that of Keynes, though he unselfishly joined the latter's standard after it had been raised. Justice imposes this remark. For that eminent economist is in some danger of losing the place in the history of economics that is his by right, both in respect to Keynesianism and in respect to Imperfect Competition. Not less do I feel bound to advert to Mrs. Robinson's claims. It is highly revelatory of the attitude of the academic mind to women that she was excluded from the above-mentioned seminar (at least she was not invited on the one occasion when I addressed it). But she was in the midst of things. Proofs of this are her

of the most promising young Cambridge men among them. And they all talked. Glimpses of the new light began to be caught by individuals all over the Empire and in the United States. Students were thrilled. A wave of anticipatory enthusiasm swept the world of economists. When the book came out at last, Harvard students felt unable to wait until it would be available at the booksellers: they clubbed together in order to speed up the process and arranged for direct shipment of a first parcel of copies.

VII

The social vision first revealed in the *Economic Consequences of the Peace*, the vision of an economic process in which investment opportunity flags and saving habits nevertheless persist, is theoretically implemented in the *General Theory of Employment, Interest, and Money* (Preface dated December 13, 1935) by means of three schedule concepts: the consumption function, the efficiency-of-capital function, and the liquidity-preference function.[25] These together with the given wage-unit and the equally given quantity of money "determine" income and *ipso facto* employment (if and so far as the latter is uniquely determined by the former), the great dependent variables to be "explained." What a *cordon bleu* to make such a sauce out of such scanty material![26] Let us see how he did it.

"Parable on Saving and Investment" (*Economica*, February 1933), an article which was a most skillfully fought rear-guard action covering retreat from the *Treatise;* and, still more significant of her rôle in the evolution of the *General Theory*, her "Theory of Money and the Analysis of Output," published as early as October, 1933, in the *Review of Economic Studies*.

[25] Distinctive terminology helps to drive home the points an author wishes to make and to focus his readers' attention. This (though nothing else) justifies the re-naming of Irving Fisher's marginal rate of return over cost—the priority of which Keynes fully recognized—and also the use of the phrase, liquidity preference, instead of the usual one, hoarding. Consumption function is certainly a better shell for Keynes's meaning than the Malthusian phrase, Effective Demand, which he also used, for nothing but confusion can come from using the concepts of Demand and Supply outside of the domain (partial analysis) in which they carry rigorously definable meaning. It is not without interest to note that Keynes called his assumptions about the forms of the consumption and liquidity preference functions Psychological Laws. This was of course, another emphasizing device. But no tenable meaning can be attached to it, not even so much meaning as attaches to the "law of satiable wants." In this, as in some other respects, Keynes was distinctly old-fashioned.

[26] It is really an injustice to Keynes's achievement to reduce it to the bare bones of its logical structure and then to reason on these bones as if they were all. Nevertheless, great interest attaches to the attempts that have been made to cast his system into exact form. I want in particular to mention: W. B. Reddaway's review in the *Economic Record*, 1936: R. F. Harrod, "Mr. Keynes and Traditional Theory," *Econometrica*, January, 1937; J. E. Meade, "A Simplified Model of Mr. Keynes' System," *Review of Economic Studies*, February, 1937; J. R. Hicks, "Mr. Keynes and the 'Classics'," *Econometrica*, April, 1937; O. Lange, "The Rate of Interest and the Optimum Propensity to Consume," *Economica*, February, 1938; P. A. Samuelson, "The Stability of Equilibrium," *Econometrica*, April, 1941 (with dynamical reformulation); and A. Smithies, "Process Analysis and Equilibrium Analysis," *Econometrica*, January, 1942 (also a study in the dynamics of the Keynesian schema). In the hands of writers

(1) The first condition for simplicity of a model is, of course, simplicity of the vision which it is to implement. And simplicity of vision is in part a matter of genius and in part a matter of willingness to pay the price in terms of the factors that have to be left out of the picture. But if we place ourselves on the standpoint of Keynesian orthodoxy and choose to accept his vision of the economic process of our age as the gift of genius whose glance pierced through the welter of surface phenomena to the simple essentials that lie below, then there can be little objection to his aggregative analysis that produced his results.

Since the aggregates chosen for variables are, with the exception of employment, monetary quantities or expressions, we may also speak of monetary analysis and, since national income is the central variable, of income analysis. Richard Cantillon was the first, I think, to indicate a *full-fledged* schema of aggregative, monetary, and income analysis, the one worked out by François Quesnay in his *tableau économique*. Quesnay, then, is the true predecessor of Keynes, and it is interesting to note that his views on saving were identical with those of Keynes: the reader can easily satisfy himself of this by looking up the *Maximes*. It should, however, be added that the aggregative analysis of the *General Theory* does not stand alone in modern literature: it is a member of a family that had been rapidly growing.[27]

(2) Keynes further simplified his structure by avoiding, as much as possible, all complications that arise in process analysis. The exact skeleton of Keynes's system belongs, to use the terms proposed by Ragnar Frisch, to macrostatics, not to macrodynamics. In part this limitation must be attributed to those who formulated his teaching rather than to his teaching itself which contains several dynamic elements, expectations in particular. But it is true that he had an aversion to "periods" and that he concentrated attention upon considerations of static equilibrium. This removed an important barrier to success—a difference equation as yet affects economists as the face of Medusa.

(3) Furthermore, he confined his *model*—though not always his argument—to the range of short-run phenomena. While points (1) and (2) are commonly emphasized, it does not seem to be realized sufficiently how very strictly short run his model is and how important this fact is for the whole structure and all the results of the *General Theory*. The pivotal restriction is that not only production functions and not only methods of production but also the quantity and quality of plant and

less in sympathy with the spirit of Keynesian economics, some of the results presented in these papers might have been turned into serious criticisms. This is still more true of F. Modigliani, "Liquidity Preference and the Theory of Interest and of Money," *Econometrica*, January, 1944.

[27] The quickest way to learn how far aggregative analysis had progressed before the publication of the *General Theory* is to read Tinbergen's survey article in *Econometrica*, July, 1935.

equipment are not allowed to change, a restriction which Keynes never tires of impressing upon the reader at crucial turns of his way (see, *e.g.*, p. 114 and p. 295).[28]

This permits many otherwise inadmissible simplifications: for instance, it permits treating employment as approximately proportional to income (output) so that the one is determined as soon as the other is. But it limits applicability of this analysis to a few years at most—perhaps the duration of the "40 months' cycle"—and, in terms of phenomena, to the factors that *would* govern the greater or smaller utilization of an industrial apparatus *if* the latter remains unchanged. *All the phenomena incident to the creation and change in this apparatus, that is to say, the phenomena that dominate the capitalist processes, are thus excluded from consideration.*

As a picture of reality this model becomes most nearly justifiable in periods of depression when also liquidity preference comes nearest to being an operative factor in its own right. Professor Hicks was therefore correct in calling Keynes's economics the economics of depression. But from Keynes's own standpoint, his model derives additional justification from the secular stagnation thesis. Though it remains true that he tried to implement an essentially long-run vision by a short-run model, he secured, to some extent, the freedom for doing so by reasoning (almost) exclusively about a stationary process or, at all events, a process that stays at, or oscillates about, levels of which a stationary full-employment equilibrium is the ceiling. With Marx, capitalist evolution issues into breakdown. With J. S. Mill, it issues into a stationary state that works without hitches. With Keynes, it issues into a stationary state that constantly threatens to break down. Though Keynes's "breakdown theory" is quite different from Marx's, it has an important feature in common with the latter: in both theories, the breakdown is motivated by causes inherent to the working of the economic engine, not by the action of factors external to it. This feature naturally qualifies Keynes's theory for the rôle of "rationalizer" of anti-capitalist volition.

(4) Quite consciously, Keynes refused to go beyond the factors that are the *immediate* determinants of income (and employment). He himself recognized freely that these immediate determinants which may "sometimes" be regarded as "ultimate independent variables . . . would be capable of being subjected to further analysis, and are not, so to speak, our ultimate atomic independent elements" (p. 247). This turn of phrase seems to suggest no more than that economic aggregates derive their meaning from the component "atoms." But there is more to

[28] Strictly, some change in the quantity of equipment must be admitted, but it is conceived of as so small, at any given point of time, that its effect upon the existing industrial structure and its output can be neglected.

it than this. We can, of course, greatly simplify our picture of the world and arrive at very simple propositions if we are content with arguments of the form: *given* A, B, C . . . , then D will depend upon E. If A, B, C . . . are things external to the field under investigation, there is no more to be said. If, however, they are part of the phenomena to be explained, then the resulting propositions about what determines what may easily be made undeniable and acquire the semblance of novelty without meaning very much. This is what Professor Leontief has called implicit theorizing.[29] But for Keynes, as for Ricardo,[30] arguments of this type were but emphasizing devices: they served to single out and by so doing to emphasize a particular relation. Ricardo did not say: "Under present English conditions, as I see them, free trade in foodstuffs and raw materials will, everything considered, tend to raise the rate of profit." Instead he said: "The rate of profit depends upon the price of wheat."

(5) Forceful emphasis on a small number of points that seemed to Keynes to be both important and inadequately appreciated being the keynote of the *General Theory*, we find other emphasizing devices besides the one just mentioned. Two we have noticed already.[31] Another is what critics are apt to call overstatements—overstatements, moreover, which cannot be reduced to the defensible level, because results depend precisely upon the excess. But it must be remembered not only that, from Keynes's standpoint, these overstatements were little more than means to abstract from non-essentials but also that part of the blame for them lies at our own door: we, as a body, simply will not listen unless a point be hammered in with one-sided energy. Granting, for the sake of argument, that the points in question were actually important enough to merit being hammered in, and remembering that the gems of unqualified overstatement do not occur in the *General Theory* itself but in the writings of some of Keynes's followers, we shall appreciate this method of flavoring what I have described as the sauce.

Three examples must suffice. First, every economist knows—if he did not he could not help learning it from conversation with businessmen —that any sufficiently general change in money wage rates will influence prices in the same direction. Nevertheless, it was not the practice of economists to take account of this in the theory of wages. Second, every economist *should* have known that the Turgot-Smith-J. S. Mill theory of the saving and investment mechanism was inadequate and that, in particular, saving and investment decisions were linked together too closely. Yet, had Keynes presented a properly qualified statement of

[29] *Cf.* his article under that title in the *Quarterly Journal of Economics*, Vol. 51, pp. 337–51.

[30] The intellectual affinity of Keynes with Ricardo merits notice. Their methods of reasoning were closely similar, a fact that has been obscured by Keynes's admiration of Malthus's anti-saving attitude and by his consequent dislike of Ricardo's *teaching*.

[31] See above, n. 25.

their true relation, would he have elicited more from us than a mumble to the effect: "Yes . . . that's so . . . of some importance in certain cyclical situations. . . . What of it?" Third, let any reader look up pages 165 and 166 of the *General Theory*—the first two pages of Chapter 13, on the "General Theory of Interest." What will he find? He will find that the theory, according to which the investment demand for savings and the supply of savings that is governed by time-preference ("which I have called the propensity to consume") is equated by the rate of interest "breaks down" because "it is impossible to deduce the rate of interest merely from a knowledge of these two factors." Why is this impossible? Because the decision to save does not *necessarily* imply a decision to invest: we must also take account of the possibility that the latter does not follow or not follow promptly. I will lay any odds that this perfectly reasonable improvement in the tenor of current teaching would not have greatly impressed us had he left the matter at this. It had to be liquidity preference to the fore—and interest *nothing* but the reward for parting with money (which cannot be so on the showing of his own text)— and so on in a well-known sequence in order to make us sit up. And we were made to sit up to some purpose. For many more of us will now listen to the proposition that interest is a purely monetary phenomenon than were ready to listen 35 years ago.

But there is one word in the book that cannot be defended on these lines—the word "general." Those emphasizing devices—even if quite unexceptionable in other respects—cannot do more than individuate very special cases. Keynesians may hold that these special cases are the actual ones of our age. They cannot hold more than that.[32]

(6) It seems evident that Keynes *wished* to secure his major results without appeal to the element of rigidity, just as he spurned the aid he might have derived from imperfections of competition.[33] There were points, however, at which he was unable to do so, especially the point at which the rate of interest has to become rigid in the downward direction because the elasticity of the liquidity-preference demand for money becomes infinite there. And at other points, rigidities stand in reserve, to be appealed to in case the front-line argument fails to convince. It is, of course, always possible to show that the economic system will cease to work if a sufficient number of its adaptive organs are paralyzed. Keynesians like this fire escape no more than do other theorists. Nevertheless, it is not without importance. The classical example is equilibrium under-employment.[34]

[32] This has first been pointed out by O. Lange, *op. cit.*, who also paid due respect to the only truly general theory ever written—the theory of Léon Walras. He neatly showed that the latter covers Keynes's as a special case.

[33] The latter factor was, however, inserted by Mr. Harrod.

[34] I have sometimes wondered why Keynes attached so much importance to proving that

(7) I must, finally, advert to Keynes's brilliance in the forging of individual tools of analysis. Look, for instance, at the skillful use made of Kahn's multiplier or at the felicitous creation of the concept of user cost which is so helpful in defining his concept of income and may well be recorded as a novelty of some importance. What I admire most in these and other conceptual arrangements of his is their *adequacy:* they fit his purpose as a well-tailored coat fits the customer's body. Of course, precisely because of this, they possess but limited usefulness irrespective of Keynes's particular aims. A fruit knife is an excellent instrument for peeling a pear. He who uses it in order to attack a steak has only himself to blame for unsatisfactory results.

VIII

The success of the *General Theory* was instantaneous and, as we know, sustained. Unfavorable reviews, of which there were many, only helped. A Keynesian school formed itself, not a school in that loose sense in which some historians of economics speak of a French, German, Italian school, but a genuine one which is a sociological entity, namely, a group that professes allegiance to One Master and One Doctrine, and has its inner circle, its propagandists, its watchwords, its esoteric and its popular doctrine. Nor is this all. Beyond the pale of orthodox Keynesianism there is a broad fringe of sympathizers and beyond this again are the many who have absorbed, in one form or another, readily or grudgingly, some of the spirit or some individual items of Keynesian analysis. There are but two analogous cases in the whole history of economics—the Physiocrats and the Marxists.

This is in itself a great achievement that claims admiring recognition from friends and foes alike and, in particular, from every teacher who experiences the enlivening influence in his classes. There cannot be any doubt, unfortunately, that in economics such enthusiasm—and correspondingly strong aversions—never flare up unless the cold steel of analysis derives a temperature not naturally its own from the real or putative political implications of the analyst's message. Let us therefore cast a glance at the ideological bearings of the book. Most orthodox

there may—and under his assumptions generally will—be less than full employment in *perfect equilibrium of perfect competition.* For there is such an ample supply of verifiable explanatory factors to account for the actual unemployment we observe at any time that only the theorist's ambition can induce us to wish for more. The question of the presence of involuntary unemployment in perfect equilibrium of perfect competition, a state that even the straw man whom Keynes called "classical economist" never believed in as a reality, is no doubt of great theoretical interest. But practically, Keynes should have fared equally well with the unemployment that may exist in a permanent state of disequilibrium. As it is, he clearly failed to prove his case. But inflexibility of wages in the downward direction stands ready to lend its aid. The theoretical question itself is the subject of a discussion that suffers from the failure of participants to distinguish between the various theoretical issues involved. But we cannot enter into this.

Keynesians are "radicals" in one sense or another. The man who wrote the essay on the Villiers Connection was not a radical in *any* ordinary sense of the word. What is there in his book to please them? In an excellent article in this *Review*, Professor Wright[35] has gone so far as to say that "a conservative candidate could conduct a political campaign largely on quotations from the *General Theory*." True, but true only if this candidate knows how to use asides and qualifications. Keynes was no doubt too able an advocate ever to deny the obvious. To some extent, though probably to a small extent only, his success is precisely due to the fact that even in his boldest rushes he never left his flanks quite unguarded—as unwary critics of either his policies or his theories are apt to discover to their cost.[36] Disciples do not look at qualifications. They see one thing only—an indictment of private thrift and the implications this indictment carries with respect to the managed economy and inequality of incomes.

In order to appreciate what this means, it is necessary to recall that, as a result of a long doctrinal development, saving had come to be regarded as the last pillar of the bourgeois argument. In fact, old Adam Smith had already disposed pretty much of every other: if we analyze his argument closely—I am speaking, of course, only of the ideological aspects of his system—it amounts to all-around vituperation directed against "slothful" landlords and grasping merchants or "masters" plus the famous eulogy of parsimony. And this remains the keynote of most non-Marxist economic ideology until Keynes. Marshall and Pigou were in this boat. They, especially the latter, took it for granted that inequality, or the existing degree of inequality, was "undesirable." But they stopped short of attack upon the pillar.

Many of the men who entered the field of teaching or research in the twenties and thirties had renounced allegiance to the bourgeois scheme of life, the bourgeois scheme of values. Many of them sneered at the

[35] D. McC. Wright, "The Future of Keynesian Economics," *Am. Econ. Rev.*, Vol. XXXV, No. 3 (June, 1945), p. 287. This article, in spite of some differences of opinion, usefully complements my own in many points into which considerations of space forbid me to enter.

[36] This is why there is such ample room for that turn of phrase that occurs so often in the Keynesian literature: "Keynes did not *really* say this" or "Keynes did not *really* deny that." In the *General Theory* most of the explicit qualifications occur in chapters 18 and 19. But the only possible reference to all the implicit ones is *passim*. The logic of the classical system is not *really* impugned (p. 278). Even Say's law (in the sense defined on p. 26) is not completely thrown out; even the existence of a mechanism that tends to equilibrate saving and investment decisions—and the rôle of interest rates in this mechanism—and even the possibility that a reduction of money wages may stimulate output is not absolutely denied; though, to be sure, only in application to very special cases, the validity of the first and the existence of the other two are occasionally recognized. Critics are therefore in constant danger of being convicted of "gross misrepresentation" exactly as unwary critics of Malthus's first Essay invariably run into a volley of quotations from the second edition—in which, in fact, Malthus went far toward explaining away Malthusianism. But it is impossible to go into all this here. In the article quoted, Professor Wright offers instructive examples.

profit motive and at the element of personal performance in the capitalist process. But so far as they did not embrace straight socialism, they still had to pay respect to saving—under penalty of losing caste in their own eyes and ranging themselves with what Keynes so tellingly called the economist's "underworld." But Keynes broke their fetters: here, at last, was theoretical doctrine that not only obliterated the personal element and was, if not mechanistic itself, at least mechanizable, but also smashed the pillar into dust; a doctrine that may not actually say but can easily be made to say both that "who tries to save destroys real capital" and that, *via* saving, "the unequal distribution of income is the ultimate cause of unemployment."[37] *This* is what the Keynesian Revolution amounts to. Thus defined, the phrase is not inappropriate. And *this*, and only this, explains and, to some extent, justifies Keynes's change of attitude toward Marshall which is neither understandable nor justifiable upon any scientific ground.

But though this attractive wrapper made Keynes's gift to scientific economics more acceptable to many, it must not divert attention from the gift itself. Before the appearance of the *General Theory*, economics had been growing increasingly complex and increasingly incapable of giving straightforward answers to straightforward questions. The *General Theory* seemed to reduce it once more to simplicity, and to enable the economist once more to give simple advice that everybody could understand. But, exactly as in the case of Ricardian economics, there was enough to attract, to inspire even, the sophisticated. The same system that linked up so well with the notions of the untutored mind proved satisfactory to the best brains of the rising generation of theorists. Some of them felt—still feel for all I know—that all other work in "theory" should be scrapped. All of them paid homage to the man who had given them a well-defined model to handle, to criticize, and to improve—to the man whose work symbolizes at least, even though it may not embody, what they wanted to see done.

And even those who had found their bearings before, and on whom the *General Theory* did not impinge in their formative years, experienced the salutary effects of a fresh breeze. As a prominent American economist put it in a letter to me: "It (the *General Theory*) did, and does, have something which supplements what our thinking and methods of analysis would otherwise have been. It does not make us Keynesians, it makes us better economists." Whether we agree or not, this expresses the essential point about Keynes's achievement extremely well. In particular, it explains why hostile criticism, even if

[37] And, after all, a glance at pp. 372–73 and 376 of the *General Theory* will convince anyone that Keynes actually came pretty near to authorizing both statements. One must be as punctiliously conscientious as is Professor Wright in order to say that he did not actually do so.

successful in its attack upon individual assumptions or propositions, is yet powerless to inflict fatal injury upon the structure as a whole. As with Marx, it is possible to admire Keynes even though one may consider his social vision to be wrong and every one of his propositions to be misleading.

I am not going to grade the *General Theory* as if it were a student's examination book. Moreover, I do not believe in grading economists—the men whose names one might think of for comparison are too different, too incommensurable. Whatever happens to the doctrine, the memory of the man will live—outlive both Keynesianism and the reaction to it.

At this I will leave it. Everyone knows the stupendous fight the valiant warrior put up for the work that was to be his last.[38] Everyone knows that during the war he entered the Treasury again (1940) and that his influence grew, along with that of Churchill, until nobody thought of challenging it. Everyone knows of the honor that has been conferred upon the House of Lords. And, of course, of the Keynes Plan, Bretton Woods, and the English loan. But these things will have to engage some scholarly biographer who has all the materials at his disposal.

[38] His last great work, that is. He wrote many minor pieces almost to his dying day.

MARGINAL ANALYSIS AND EMPIRICAL RESEARCH

By FRITZ MACHLUP*

Certain critics of "conventional" economic theory from time to time voice surprise at the general acceptance of marginalism and at "the confidence of the textbook writers in the validity of the marginal analysis."[1] They disapprove of allowing the principle of marginalism to play the rôle of a fundamental postulate in the teaching of economics.

Marginalism Implied in the Economic Principle

These critics would probably revolt against all those definitions of economics which contain marginalism as an implicit criterion. Marginalism, as the logical process of "finding a maximum," is clearly implied in the so-called *economic principle*—striving to achieve with given means a maximum of ends.

Economics in a narrow sense is confined to such aspects of conduct as can be explained with reference to the principles of maximizing satisfaction, income, or profit. Under definitions of this sort any deviations from the marginal principle would be extra-economic. Yet, to refuse to deal with any type of business conduct that cannot qualify by the strict standards of marginalism may justly be regarded as a lazy man's excuse. If certain types of business conduct can be found in reality with regularity and consistency, it is undoubtedly desirable to analyze them regardless of their "economic rationale."[2] And if some of these allegedly "non-economic" aspects of conduct can be explained within the conceptual framework of economics, one may prefer definitions which admit behavior types not strictly subject to marginal analysis among the proper subject matter of economic theory.

Interpretation of Business Behavior

To recognize the study of certain types of merely "traditional" conduct as legitimately within the province of economic theory is one thing; it is another to accept as correct the interpretations of business behavior offered by the critics of marginal analysis. Unable to see how marginal analysis can be applied to their material, these critics have concluded that marginalism should be discarded. It can be shown, however, that

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[1] Richard A. Lester, "Shortcomings of Marginal Analysis for Wage-Employment Problems," *Am. Econ. Rev.*, Vol. XXXVI, No. 1 (Mar., 1946), p. 63.

[2] *Cf.* the admonition that "if an economist finds a procedure widely established in fact, he ought to regard it with more respect than he would be inclined to give in the light of his own analytic method." R. F. Harrod, "Price and Cost in Entrepreneurs' Policy," *Oxford Economic Papers*, No. 2 (1939), p. 7.

the alleged "inapplicability" of marginal analysis is often due to a failure to understand it, to faulty research techniques, or to mistaken interpretations of "findings."

This is not to deny that a goodly portion of all business behavior may be non-rational, thoughtless, blindly repetitive, deliberately traditional, or motivated by extra-economic objectives. But the material thus far presented as the result of empirical research has not proved what the analysts intended to prove. In some instances their findings were the result of careful research, based on a thorough knowledge of economic theory, but their interpretations were still questionable. In other instances the whole approach of the research project was so faulty that the findings as well as the interpretations are all but worthless except as targets for critical discussion.

I. Marginal Analysis of the Single Firm

Any attempt to "test" marginalist theory through empirical research presupposes full understanding of the theory. It is necessary to know precisely what the theory says, what it implies, and what it intends to do. Since it has been developed gradually over a period of more than a century,[3] it will not suffice to take any particular writer as one's authority or any particular exposition as one's text. Earlier versions lack the necessary refinements and methodological foundations; later formulations often take for granted necessary assumptions or qualifications made in previous expositions. To criticize the theory because of the errors and omissions in any treatise, however representative, is unfair.

The following statement of essential elements in the marginalist analysis of the single business firm attempts merely to give major emphasis to points often overlooked or misunderstood.

The Determination of Output and Employment

The theory of the "equilibrium of the single firm" is not as ambitious as is often believed. It does not attempt to give all the reasons why a given firm makes the type or quality of product which it makes; why it produces the output that it produces; why it employs the workers that it employs; or why it charges the prices that it charges. It is probably an understatement of the importance of the historical situation when Hall and Hitch modestly remark: "There is usually some element in the prices ruling at any time which can only be explained in the light of the history of the industry."[4] The phrase "usually some element" does

[3] Cournot was among the earlier expositors of marginal analysis of the single firm.

[4] R. L. Hall and C. J. Hitch, "Price Theory and Business Behavior," *Oxford Economic Papers*, No. 2 (1939), p. 33.

not do justice to the part played by historical antecedents in the determination of product, output, employment, and prices. The rôle of the past in shaping the actual conditions under which the firm operates, in developing the routine of its responses to changes in conditions, and in impressing it with experiences which have taught it to size up and anticipate these changes as the basis for its decisions—this rôle is by no means denied by marginal analysis. The rôle of the past in the process of adjusting the present to the anticipated future is essential in all theory of human conduct. It is implied in the very attempt of constructing a pattern of behavior of the single firm.

Instead of giving a complete explanation of the "determination" of output, prices, and employment by the firm, marginal analysis really intends to explain the effects which certain *changes* in conditions may have upon the actions of the firm. What kind of changes may cause the firm to raise prices? to increase output? to reduce employment? What conditions may influence the firm to continue with the same prices, output, employment, in the face of actual or anticipated changes? Economic theory, static as well as dynamic, is essentially a theory of adjustment to change. The concept of equilibrium is a tool in this theory of change; the marginal calculus is its dominating principle.

A. *Marginal Revenue and Cost of Output*

Subjectivity of Cost and Revenue

The proposition that the firm will attempt to equate marginal cost and marginal revenue is logically implied in the assumption that the firm will attempt to maximize its profit (or minimize its losses). It should hardly be necessary to mention that all the relevant magnitudes involved—cost, revenue, profit—are subjective—that is, perceived or fancied by the men whose decisions or actions are to be explained (the business men)—rather than "objective"—that is, calculated by disinterested men who are observing these actions from the outside and are explaining them (statisticians and economists as theorists—not as consultants).

The marginal cost that guides the producer is the addition to his total cost which he expects would be caused by added production. An outside observer, if he had expert knowledge of the production techniques and full insight into the cost situation of the producing firm, might arrive at a different, "objective" figure of the firm's marginal cost; but what the observer thinks is not necessarily the same as what the producer thinks. The producer's actual decision is based on what he himself thinks; it is based on "subjective" cost expectations.

One may perhaps assume that the producer is intensely interested in knowing his cost and that, in general, he has the experience which

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enables him to know it. Yet, one must not assume that all producers "really" know their cost in the sense in which an efficiency expert would determine it; several of them may lack the interest or experience; they may not find it worth their while to dig too deeply into the mysteries of their business. (After all, we know that there are good business men and bad, and that the majority is somewhere between good and bad.) But this does not invalidate the proposition that the producer is guided by marginal cost.[5]

The same thing is true with regard to price expectations and sales expectations. It is the "demand as seen by the seller" from which his revenue expectations stem. The increase in demand which is relevant in the analysis of the firm need not be "the real thing"; it may precede an "actual" increase in demand, lag behind it, or be entirely imaginary. The business man does what he does on the basis of what *he* thinks, regardless of whether you agree with him or not.

Marginal analysis of the firm should not be understood to imply anything but subjective estimates, guesses and hunches.

The Range of Price and Output Variations

Beginning students of economics who watch their instructor draw demand and cost curves covering half the blackboard may be misled into believing that the business man is supposed to visualize the possibilities of producing and selling amounts of output ranging from almost zero up to two or three times the amounts that he is currently producing and selling; that the business man is supposed to figure out how much he might be able to sell at prices several times as high as the current price, and how much at prices only one-half or one-third as high. The curve draftsman, indeed, seems to ascribe extraordinary powers of imagination to the business wizards.

Misunderstandings of this sort, and erroneous criticisms of marginal analysis, could be avoided if it were made clear to the students that the length of the curves, *i.e.*, the wide range they cover, was chiefly designed to enable those in the back rows of the class room to make out what goes on on the blackboard; and to permit them to practice curve analysis without using magnifying glasses. The range of possibilities—prices, sales, outputs—which a business man may have in mind is probably quite narrow. Rarely will a business man bother pondering the probable effects of a price increase or cut by 50 per cent; but he may easily think about what a 10 or 15 per cent price change might do to his sales; or what discount it might take to land some additional orders.

The principles of analysis are not altered by the realization that the

[5] One may wish, of course, to qualify any social implications of the proposition once the subjective character of the relevant cost data is recognized.

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alternatives which business men weigh concerning prices or production volumes cover a much more moderate range than the curves which teachers of economics draw to depict the pattern of marginal calculus.

The Time-Range of Anticipations

In view of the known attempts to derive statistical cost curves from accounting data—which of necessity refer to conditions of the past—it is important to mention that the marginal cost and marginal revenue concepts in the analysis of the equilibrium of the firm refer to expectations of future conditions. To be sure, past experience is always in the background of anticipations of the future, and past accounting records may form a firm point of departure for evaluating prospective and hypothetical cost and revenue figures. But anticipations alone are the relevant variables in the marginal calculus of the firm.

What is the time-range of the significant anticipations? How far into the future do they reach, and what period, if any, is given special emphasis? Is tomorrow more important than next year or several years hence? Is it the "short run" or the "long run" which controls current action?

When a firm wishes to increase production, it usually has a choice of expanding the equipment and productive capacity of its plant or of stepping up the output of the existing plant with unchanged equipment. If productive capacity is already well utilized, the marginal cost of producing larger outputs will be higher in the existing establishment with unchanged equipment than in an establishment with adjusted, increased equipment. If several degrees of adjustment in the productive equipment are possible, several marginal cost functions will be "given" and several different outputs will be "the equilibrium output" under given sales expectations.

To cope with these problems economists have made the distinction between the "short period," assuming no adaptation of equipment, and the "long period," assuming complete adaptation of equipment. Students often believe that the latter period is called "long" because it takes a long time to expand the plant. This need not be the case. A better understanding of the concepts might be achieved by associating the degree of planned plant adjustment with the length of time for which the changed production volume is expected to be maintained. If an increased demand is expected to prevail for a short period only, it will not pay to invest in plant expansion, and "short-run cost" will determine output. On the other hand, if demand is expected to continue at the higher level for a sufficiently long period, an expansion of the establishment will be considered a profitable investment, and "long-run cost" will determine output. Needless to say, many intermediate periods, that

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is, several degrees of plant adjustment with different marginal cost conditions, may exist.

On the basis of this reasoning one will recognize it as a misunderstanding to argue that short-run cost is of controlling influence on the ground that we always live and work in the short period. The duration for which demand conditions are expected to prevail will determine the relevant "period" of cost anticipations. Of course, this relevance is again subjectively determined, not by the "objective" judgment of the economist.

The time-range of the anticipations with regard to the demand and selling outlook is subject to similar considerations. It is a mistake to think that the relevant "period" for demand and marginal revenue expectations is determined by the length of time it takes for today's production to reach the market.[6] If a price reduction is apt to spoil the market for a long time to come, or a price increase to harm customer loyalty, the effects on future profits will hardly be neglected in considering current actions. If a firm were to regard a certain price change as a desirable step for the time being, but feared that a later reversal might be difficult or costly, it would weigh this anticipated future cost or loss against the short-run benefit.

Anticipations of this sort, complementary or competing with one another, are not exceptions to marginal analysis but are part and parcel of it. To be sure, when an instructor teaches graphical analysis, he will do well to abstract from complicated cost and revenue anticipations and to concentrate on those that can be neatly packed away in geometric curves.

The Numerical Definiteness of the Estimates

The geometric curves and arithmetic schedules by which the instructor presents marginal cost and marginal revenue of the firm seem to leave no room for doubt that these anticipations take the form of estimates of definite numerical values. While this may be necessary for teaching purposes, it should not mislead the student into believing that every action of the business man is in fact the result of a conscious decision, made after careful calculations of differential revenue and cost.

Business men do not always "calculate" before they make decisions, and they do not always "decide" before they act. For they think that they know their business well enough without having to make repeated calculations; and their actions are frequently routine.[7] But routine is based on principles which were once considered and decided upon and have then been frequently applied with decreasing need for conscious

[6] Richard A. Lester, *Economics of Labor* (New York, 1941), p. 181.

[7] See George Katona, "Psychological Analysis of Business Decisions and Expectations," *Am. Econ. Rev.*, Vol. XXXVI, No. 1 (Mar., 1946), p. 53.

choices.[8] The feeling that calculations are not always necessary is usually based upon an ability to size up a situation without reducing its dimensions to definite numerical values.[9]

The business man who is persuaded to accept a large order with a price discount or some other concession usually weighs the probability that he will have to make the same concession to his other customers. This is one of the business man's considerations included in the "calculation" of marginal revenue. In order to explain this to the student, or to reduce it to curves and schedules, the economics teacher makes "exact" calculations; in order to make up his mind whether to take or reject the order, the business man ordinarily needs no arithmetic, mental or written, and indeed needs no concrete figures. Yet his reasoning or his routine behavior is most conveniently analyzed in terms of marginal revenue.

Where the marginal revenue is negative, that is to say, where gross receipts after accepting the additional order (with the price concession) would be smaller than without it, no further consideration is necessary. But if the dollar volume of sales can be increased by accepting the order (taking full account of all repercussions on future marketing possibilities), the business man must take another step in his reasoning: will it pay to make more sales in view of the additional cost of producing the larger output? If conditions have not changed, he will not have to make new calculations; if changes have occurred or are expected, some figuring may be required. But it is a type of figuring for which usually no accounting records are consulted, no memoranda prepared and of which no records are made. Often the business man can do this "figuring" in his head; if not, he may take a piece of scrap paper, jot down a few round numbers, reach his conclusion, and throw the paper in the waste basket.

The theorist's contention that such reasoning is typically based either on additional cost or on total cost—and hence most conveniently described in terms of marginal cost—is contradicted by certain empirical researchers who claim that most business men calculate on the basis of average cost even if they lose money by doing so. With this contradiction we shall deal later.

Non-Pecuniary Considerations

Marginal analysis of the equilibrium of the single firm rests on the assumption that the business firm attempts to maximize its profits. To

[8] Discussing the difference between "routine behavior" and "genuine decisions," Dr. Katona explains with regard to routine actions that "principles, well understood in their original context, tend to be carried over from one situation to another." *Ibid.*, p. 49. Genuine decisions are made when expectations "change radically." *Ibid.*, p. 53.

[9] Although I do not know either the width or length of my automobile, I am quite capable of making adequate comparisons between these magnitudes and the space between two parked cars, which I estimate again without thinking of feet, inches, or any numbers.

make this assumption is not to deny that the men who run a business may be motivated also by other considerations.

That a business man is motivated by considerations other than the maximization of money profits does not necessarily make his conduct "uneconomic." The economic theorist finds no difficulty in fitting into the pattern of "economic" conduct (that is, into the conceptual scheme of consistent maximization of satisfaction within a given preference system) the householder and consumer who makes donations to friends or the church; or the seller of labor services who chooses a badly-paying but less strenuous job in preference to one that pays more but calls for more exertion. Likewise, there is nothing essentially "uneconomic" in the conduct of a business man who chooses to pay higher prices for raw material purchased from a fraternity brother, or to sell at a special discount to members of his church, or who refrains from embarking on a promising expansion of his business because he prefers an easier life.

There are economic theorists who would include considerations of this sort among the data for the marginal calculus of the firm. The satisfaction from favoring his friends through higher purchase prices or lower selling prices is a special reward or "revenue" to the business man; he may ask himself how much it is worth to him, and we may conceivably add it to his revenue curve. To give up an easier life, expend greater efforts and increase his worries are among the business man's "costs" when he considers an expansion of his business; we may conceivably add it to his "cost" curve. Any number and type of non-pecuniary sacrifices and rewards could thus be included, at some sort of "money equivalent," among the costs and revenues that make up the profits of the firm: the marginal calculus of the firm would become all-inclusive.

It seems to be methodologically sounder if we do not reduce the non-pecuniary satisfactions and dissatisfactions (utilities and disutilities) of the business man to money terms and do not try to make them part of the profit maximization scheme of the firm. If *whatever* a business man does is explained by the principle of profit maximization—because he does what he likes to do, and he likes to do what maximizes the sum of his pecuniary and non-pecuniary profits—the analysis acquires the character of a system of definitions and tautologies, and loses much of its value as an explanation of reality. It is preferable to separate the non-pecuniary factors of business conduct from those which are regular items in the formation of money profits.

This methodological controversy is not too important. Not much depends on whether non-pecuniary considerations of the business man are translated into money terms or, instead, treated as exceptions and qualifications in the explanation of typical business conduct. The pur-

pose of the analysis of the firm is not to explain all actions of each and every firm in existence; we are satisfied if we can explain certain strong tendencies in a representative sector of business. The chief aim of the analysis, moreover, is to show the probable effects of certain changes; if the direction in which output or price is likely to move as a result of a certain change in "data" is not affected by the existence and strength of non-pecuniary factors in business conduct, their inclusion in or exclusion from the marginal analysis of the firm is not a crucial matter.

As a matter of fact, the nature, strength and effects of non-pecuniary considerations in business behavior are problems that need to be investigated. One may presume that producing larger production volumes, paying higher wage rates, or charging lower product prices than would be compatible with a maximum of money profits may involve for the business man a gain in social prestige or a certain measure of inner satisfaction.[10] It is not impossible that considerations of this sort substantially weaken the forces believed to be at work on the basis of a strictly pecuniary marginal calculus.

During the war we were able to observe that patriotism was a strong force in the production policy of American business. There can be no doubt that many firms produced far beyond the point of highest money profits. To be sure, they made large profits, but in many instances they could have made still more money without the last, particularly expensive, portions of output. Their conduct was not defined by the principle of maximization of money profits.[11]

Another of the possibly important qualifications in the analysis of the firm refers to the conflict of interests between the hired managers and the owners of the business. The interest of the former in inordinately large outlays or investments may be capable of description in terms of a

[10] A gain in social prestige may sometimes increase the good will of a firm on which it expects to cash in later. If such a gain is an aim of the firm's policy, it should be treated as a part of its pecuniary considerations. For example, a firm may grant extraordinarily high wage rates as a part of its selling and advertising expense; that is to say, it may hope that its "generous labor policy" will make its products more popular. A portion of current labor cost of the firm would then properly be allocated to future rather than current output.

[11] Observance of laws and regulations presents a special problem for the analysis of business conduct. It will depend on business morals whether prohibited, unlawful alternatives may be regarded as definitely excluded and therefore non-existent; or whether they may be considered as possibilities subject only to certain peculiar risks. Assume, for example, that a price ceiling is fixed for the sale of a product, and fines are provided for violations. To the business man who is unconditionally law-abiding the ceiling price is the only possible price, regardless of how insistently some of his customers may tempt him with higher bids. To the business man, however, who abides by the law only because of the risk of being found out and fined, "demand prices" above the ceiling are real possibilities and the risks of penalties are additions to cost or deductions from revenue. If the sanctions for violations include jail sentences, the risk becomes largely non-pecuniary and it is up to the potential violator, or to the theorizing economist, whether or not that risk will be "converted" into money terms. Black-market prices are in part the result of such risk conversions.

pecuniary calculus, but it is not maximization of the firm's profits which serves here as the standard of conduct. Maximization of salaries and bonuses of professional managers may constitute a standard of business conduct different from that implied in the customary marginal analysis of the firm. The extent to which the two standards would result in sharply different action under otherwise similar conditions is another open question in need of investigation. At this juncture we know only that a qualification must be made. How much it may modify the results of marginal analysis of the single firm we do not know.

B. *Marginal Productivity and Cost of Input*

The Firm, the Industry, the Economy

Marginal productivity has different meanings in the equilibrium theories of the single firm, the industry, and the whole economy. In the theories of demand for particular "factors of production" (productive services) by the industry or economy as a whole marginal productivity analysis is of another methodological character than in the theory of factor employment by the individual firm: the level of abstraction and the frame of reference are different.

In this article we are concerned only with the analysis of the single firm. Like marginal product cost and marginal revenue in the theory of the firm's output, marginal factor cost and marginal productivity are the variables in the theory of the firm's input.

Determination of Input and Output

In a sense, the determination of input on the basis of factor cost and factor product is merely the reverse side of the determination of output on the basis of product cost and revenue. In the former, the cost of and revenue from employing additional factors are balanced; in the latter, the cost of and revenue from producing additional product are balanced. Before we draw curves for the cost of production of a good, we must assume that the supply curves of the factors of production are known, because the buying prices of factors are among the things that make up production cost. Before we draw curves for the revenue productivity of a factor we must assume that the demand curves for the products made with the help of this factor are known, because the selling prices of products are among the things that make up factor productivity. Hence, in each pair of curves one of the curves comprises the data shown in one curve of the other pair.

The interrelationship between the four curves (or functions) can be shown schematically as follows:

$$
\begin{tikzcd}
& \text{Determination of input} & \\
\text{Supply of factor} \arrow[ur] \arrow[d] & & \text{Productivity of factor} \arrow[ul] \\
\text{Cost of product} \arrow[dr] & & \text{Demand for product} \arrow[u] \arrow[dl] \\
& \text{Determination of output} &
\end{tikzcd}
$$

A fifth set of data, the production function, showing the technological transformation of factors into products, is implied in both pairs of curves: in the analysis of output it is among the data determining the cost of production; in the analysis of input it is among the data determining the productivity of the factor.[12]

These remarks should make it clear that neither of the two analyses is prior to the other. They are of strictly equal rank, merely two ways of looking at the same thing, namely, the conduct of a single firm maximizing its profits. The only difference is that the significant magnitudes of the analysis are, on the one side, units of factors (such as labor hours) and, on the other side, units of product.

Marginal Net Revenue Productivity

When we speak in the analysis of the firm of "marginal productivity" of a factor, this is an abbreviation for longer but synonymous expressions such as "marginal value productivity" or "marginal net revenue productivity."

The following steps are pedagogically expedient in explaining the concept of marginal ~~net~~ revenue ~~productivity:~~

(1) Determine by how much a given physical volume of production, X, is increased if the employment of a particular factor is increased slightly (*e.g.*, by one unit), and call the output increase the factor's "marginal physical product," MPP.

(2) Determine the selling price, P, at which MPP can be sold.

(3) Multiply MPP by P in order to obtain the "value of the marginal ~~physical~~ product," $VM\cancel{P}P$.

(4) Determine whether X, because of the sale of MPP, has to be sold at a price lower than it would sell if MPP were not sold; if so, multiply this price reduction, ΔP, by X, and obtain the "revenue loss on sales because of price cut," $X\,\Delta P$.

[12] This shows that the customary analysis lacks elegance. Production cost and factor productivity are "derived" rather than "original" data. One could do more elegantly with only three sets of data: (a) the possibilities of buying productive services (the factor supply function), (b) the possibilities of transforming them into products (the production function), and (c) the possibilities of selling the products (the product demand function).

(5) Deduct $X\Delta P$ from $VMPP$ in order to obtain the "marginal gross revenue product," $MGRP$.
(6) Determine whether the production of MPP was connected with increased or decreased outlays for any other complementary or substitutable means of production (materials, fuel, lubricants, labor of any sort, capital funds, wear and tear of equipment, etc.), exclusive of the factor in question, and call them (positive or negative) "incidental expenses," ΔC.
(7) Deduct ΔC from $MGRP$ in order to obtain the "marginal net revenue ~~product," *MNRP*~~.

The use of the word "revenue" as an adjectival modifier is preferred by many writers in order to stress (a) the distinction between physical product and money product, and (b) the fact that marginal revenue is less than selling price if it takes a price cut to dispose of additional output. The use of the word "net" is preferred in order to stress the fact that additional output will rarely be produced efficiently by increasing the employment of one particular factor while leaving all other outlays unchanged; as a rule, some other adjustments will be appropriate. That "marginal productivity" refers regularly to a net revenue product has been clear to economic theorists for over fifty years.[13]

Technology, Market and Supply Conditions

The marginal net revenue product of a factor, at some level of employment, becomes zero or negative. This may be due to technological difficulties—shown in step (1) of the above scheme—or to difficulties in marketing—shown in step (4)—or to difficulties with other supplies and expenses—shown in step (6).

On the other hand, it is possible that both the marginal physical product and the marginal gross revenue product are zero and, nevertheless, the marginal net revenue product is positive. This will be the case if additional units of factor are used only to secure "incidental reductions in expenses" for other means of production (*i.e.*, substitution) rather than an increased production volume. For example, an additional unskilled laborer may be employed as another watchman to reduce the "use" of certain materials which are in heavy demand outside of the plant. Or he may be employed to dust or cleanse certain valuable equipment and thus reduce outlays for repairs or replacements. Substitution

[13] *E.g.*, "the net product . . . is the net increase in the money value of . . . total output after allowing for incidental expenses." (Alfred Marshall, *Principles of Economics*, 8th Edition, p. 521.) For a more detailed discussion of the concept, see my essay, "On the Meaning of the Marginal Product," *Explorations in Economics*, Contributed in Honor of F. W. Taussig (New York and London, 1936), pp. 250–63.

of this sort is nearly always possible[14] and will usually make for positive marginal net revenue productivities even where marginal gross revenue productivities are negative because of limitations in the demand for the product.

Marginal productivity reflects all sorts of technological possibilities. An increased amount of the factor may be used (a) for reducing other expenses without increasing total output (substitution in the narrow sense), (b) for increasing total output with no or few adjustments in the use of other factors (substitution in a wider sense), and (c) for increasing total output with corresponding increases in the use of other factors (inclusive of long-run adjustments, possibly without any substitution). In the last case the incidental expenses will certainly absorb the major portion of the marginal gross revenue product.

Marginal productivity reflects also all possible situations in the demand for the product. If demand is completely inelastic beyond a certain volume, that is, if additional output is not saleable at all, the effect upon marginal productivity is not any worse than if larger outputs can be marketed at severely reduced prices. For whenever the elasticity of demand is less than unity, gross revenue from larger outputs would be lower than from smaller outputs. Hence, the marginal gross revenue product of the factor would become negative. Possibilities of landing additional orders at a price discount but without affecting the rest of the business (that is, possibilities of price discrimination) would show in the fact that no deduction for revenue loss would have to be made from the value of the marginal physical product. Whatever views the firm may have concerning the market for its product are fully reflected in the marginal productivity of the factors employed.

Marginal productivity, finally, reflects all possible conditions of supply of complementary and substitutable factors. Extreme scarcity of a complementary factor may cause a most rapid decline in marginal productivity. Increased supply of a substitutable factor may drastically reduce the whole marginal productivity schedule.

While the conditions of supply of complementary and substitutable factors are among the data determining the marginal productivity of a particular factor of production, the conditions of its own supply are regarded as a separate matter. The "incidental expenses" of increased

[14] The assumption of fixed coefficients of production sometimes affords convenient and permissible simplifications of analysis. But in actual fact, substitution is a practical possibility in almost any production. Beginners sometimes think that substitution of labor for capital must mean the scrapping of machines and shifting of their functions to hand labor. Better care or maintenance work for equipment, postponing the need for replacement, constitutes a clear case of substitution of labor for capital. Increased utilization of plant capacity with increased employment and output also raises the ratio of labor to capital and is another form of substitution.

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employment of the factor do not include any of the cost of that factor. The cost of the factor itself is not a part of its marginal net productivity but, instead, is the counterpart with which a balance is sought.

Marginal Factor Cost

Where the supply of the factor is perfectly elastic at a given point, that is, where the firm may be able to employ an additional amount without having to pay for it a higher price per unit, the "marginal factor cost" is equal to the price of the factor (wage rate). If, however, by purchasing or employing more of a factor the firm bids up the price not only of the additional units of the factor but also of the units previously employed, this increase in outlay is a part of the cost of the additional employment. The additionally employed factors would cost the firm not only what they themselves are paid but also the incidental increase in the pay of their fellow factors.

Marginal factor cost, in other words, is the total increase in payment for the particular type of productive service: it consists of (1) the price (wage) paid to the additionally employed, and (2) the price increase (wage increase) paid for the amount of services employed before the addition. In the case of labor, these increases may be due to union action anticipated because of the increased demand for labor, or to the impossibility of discriminating against older employees when new ones can be attracted only at higher rates of pay.

In considering any increase in employment the employer will ask himself whether the additional services will "pay for themselves," that is, what they will cost him and what they will be worth to him. This is all that the economist means when he says that the employer, maximizing his profits, equates marginal factor cost with marginal productivity.

Monopoly, Monopsony, Discontinuities

Neither the existence of monopoly nor of monopsony need invalidate the proposition that the firm will equate marginal productivity and marginal cost of input. For any degree of monopoly is fully reflected in marginal net revenue productivity, and any degree of monopsony is fully reflected in marginal factor cost.[15]

[15] To be sure, there may be a large difference between the price of the factor and the value of its marginal physical product. This difference is due to (a) the reduction in product price that the firm must grant to its customers in order to dispose of an increased output and (b) the increase in factor price that the firm must grant to its suppliers or employees in order to acquire an increased input. These two parts of the spread between the price of the factor and the value of its marginal physical product have been called (a) "monopolistic exploitation" and (b) "monopsonistic exploitation" of the factor. These terms, misleading in several respects, are merely to remind the student of the fact that the spread would not exist if the firm were (a) selling its products under pure competition and (b) buying its factors under pure competition.

Discontinuity of the marginal productivity and marginal factor cost curves, however, may make it impossible for the two magnitudes to be equal. If marginal factor cost at a certain level of employment is below marginal productivity but would be above it at the next higher possible level of employment, the firm will stop short of the latter. Moderate jerks from "marginal cost below revenue" to "marginal cost above revenue" are nothing unusual in arithmetic illustrations; in geometric curves they occur only under special assumptions.

For example, marginal net revenue productivity may precipitously drop at a given employment if the product is sold under certain oligopoly conditions (involving high elasticity of demand in the case of a price increase and low elasticity in the case of a price reduction[16]) and if the factor is not easily substitutable for other factors. The marginal factor cost curve might intersect this marginal productivity curve in its vertical portion. Likewise, marginal factor cost may precipitously rise at a given employment if the factor is bought or hired under certain oligopsony conditions (involving high elasticity of supply in the case of a reduction in the factor price and low elasticity in the case of a raise.[17]) The marginal productivity curve might intersect this marginal factor cost curve in its vertical portion. Under such circumstances the firm would be in equilibrium, with its profits maximized, at a volume of input (employment) at which marginal factor cost is below marginal productivity.

Subjectivity, Range, Concreteness

Almost everything that has been said in earlier sections concerning the meaning of marginal revenue and marginal cost of output holds true, *mutatis mutandis*, in regard of the meaning of marginal productivity and marginal cost of input. More specifically, we should emphasize that

(1) the concepts are to be understood as referring to subjective estimates and conjectures;

(2) the range of imagined variations of the magnitudes in question may be rather narrow;

(3) the time-range of the relevant anticipations will depend on the cirumstances of each case and will rarely be confined to the short run;

(4) the estimates need not be reduced to definite numerical values;

(5) non-pecuniary considerations may effectively compete with those pertaining to the maximization of money profits.

It is probably unnecessary to expatiate again on these points in connection with marginal productivity analysis. Only on the subject of

[16] Under such oligopoly conditions the firm will maximize profits at a volume of output at which marginal revenue is above marginal cost.

[17] Oligopsony in the labor market is probably not as frequent as oligopoly in the product marker.

numerical definiteness does further discussion seem advisable, especially in view of what was said above about the concept of marginal net revenue productivity. The process by which this magnitude may be derived, involving seven separate "steps" and at least as many variables, is rather formidable. If this analytical pattern were taken as a realistic description in photographic likeness of the actual reasoning of the typical employer, the employer would have to be endowed with talents which only few possess in reality.

An analogy may explain the apparent contradiction.

The "Extreme Difficulty of Calculating"

What sort of considerations are behind the routine decision of the driver of an automobile to overtake a truck proceeding ahead of him at slower speed? What factors influence his decision? Assume that he is faced with the alternative of either slowing down and staying behind the truck or of passing it before a car which is approaching from the opposite direction will have reached the spot. As an experienced driver he somehow takes into account (a) the speed at which the truck is going, (b) the remaining distance between himself and the truck, (c) the speed at which he is proceeding, (d) the possible acceleration of his speed, (e) the distance between him and the car approaching from the opposite direction, (f) the speed at which that car is approaching; and probably also the condition of the road (concrete or dirt, wet or dry, straight or winding, level or uphill), the degree of visibility (light or dark, clear or foggy), the condition of the tires and brakes of his car, and—let us hope—his own condition (fresh or tired, sober or alcoholized) permitting him to judge the enumerated factors.

Clearly, the driver of the automobile will not "measure" the variables; he will not "calculate" the time needed for the vehicles to cover the estimated distances at the estimated rates of speed; and, of course, none of the "estimates" will be expressed in numerical values. Even so, without measurements, numerical estimates or calculations, he will in a routine way do the indicated "sizing-up" of the total situation. He will not break it down into its elements. Yet a "theory of overtaking" would have to include all these elements (and perhaps others besides) and would have to state how changes in any of the factors were likely to affect the decisions or actions of the driver.[18] The "extreme difficulty of calculating,"[19] the fact that "it would be utterly impractical"[20] to attempt to work out and ascertain the exact magnitudes of the

[18] Very cautious drivers are apt to work with so wide safety margins that small changes in the "variables" may not affect the actions. Timid souls may refuse to pass at all when another car is in sight.

[19] Lester, *Am. Econ. Rev.*, Vol. XXXVI, No. 1, p. 72.

[20] Lester, *ibid.*, p. 75.

variables which the theorist alleges to be significant, show merely that the *explanation* of an action must often include steps of reasoning which the acting individual himself does not *consciously* perform (because the action has become routine) and which perhaps he would never be *able* to perform in scientific exactness (because such exactness is not necessary in everyday life). To call, on these grounds, the theory "invalid," "unrealistic" or "inapplicable" is to reveal failure to understand the basic methodological constitution of most social sciences.

Imagine an empirical researcher attempting to test by a naïve questionnaire method the "theory of overtaking," questioning hundreds of drivers about their ability to estimate distances and speed, and to calculate the relevant time intervals and the degrees in which a small change in any one of the variables affected the result. Would he not obtain the most hopeless assortment of answers? Would not these answers support the conclusion that the assumptions of the theorists had been wrong and that one must look for other explanations? Yet I can hardly believe that any sensible person would deny the relevance of the enumerated variables and would contend, for example, that speed and distance of the approaching automobile could not have been taken into account by the driver passing the truck, because he was not good in mathematics.[21]

The Analysis of Change Needs No Exactness

The business man who equates marginal net revenue productivity and marginal factor cost when he decides how many to employ need not engage in higher mathematics, geometry, or clairvoyance. Ordinarily he would not even consult with his accountant or efficiency expert in order to arrive at his decision; he would not make any tests or formal calculations; he would simply rely on his sense or his "feel" of the situation. There is nothing very exact about this sort of estimate. On the basis of hundreds of previous experiences of a similar nature the business man would "just know," in a vague and rough way, whether or not it would pay him to hire more men.

The subjectivity of his judgments is obvious. Just as different drivers may reach different conclusions about the advisability of passing another car under given "objective" conditions, different business men will have different "hunches" in a given situation. The subordinates or partners of the man who makes a decision may sharply disagree with him; they may see the situation quite differently. They may be more optimistic about the possibilities of obtaining more orders with only

[21] Driving at night, when he has nothing to go by except the size and brilliance of the headlights of the approaching cars, the experienced driver becomes conscious of the fact that in daytime he has better ways of sizing up their speed and distance. With reduced visibility he will "calculate" with greater safety margins.

slight price concessions or through increased sales efforts (which would raise both the marginal revenue and marginal productivity curves drawn by the theorist to characterize their considerations). Or they may be more certain about the technical possibility of achieving a larger output by certain production methods (which would lower the marginal cost curve, and could raise or lower the marginal productivity curves). Some decision, usually a routine decision without debate, is made, or at least some action is taken; and the decision or action is necessarily affected by the business man's conjectures concerning sales possibilities and production possibilities.

The way in which changes in the essential variables will affect the probable decisions and actions of the business man is not much different if the curves which the theorist draws to depict their conjectures are a little higher or lower, steeper or flatter. These curves are helpful to the student of economics in figuring out the probable effects of change—in learning in what direction output, prices and employment are likely to be altered, and under what circumstances increases or decreases are likely to be drastic or negligible. Better markets or higher costs are likely to affect business men of different vision or daring in rather similar ways; and any differences can be conveniently "typed" in terms of shapes, positions and shifts of the curves into which the theorist condenses the business men's conjectures.

Equipped with this understanding of the meaning and purposes of marginal analysis, we may proceed to a discussion of the findings of empirical research which purportedly failed to verify it—or by which it was deemed to be contradicted and disproved.

II. Empirical Research on the Single Firm

There is not as yet available any large amount of material derived from systematic empirical research on the business conduct of the single firm. But almost everybody interested in these questions has had occasional conversations with business men, and the impressions gained from such inquiries into the business men's experiences often form an empirical basis for the doubts which so-called "realistic" critics entertain of "theoretical" analysis.

I submit that the few systematic and the many casual researchers have often been misled by pitfalls of semantics and terminology and by a naïve acceptance of rationalizations in lieu of genuine explanations of actions.

Economists' Vocabulary and Business Language

The vast majority of business men have never heard of expressions such as elasticity of demand or supply, sloping demand curves, mar-

ginal revenue, marginal cost. If they do not know the words or the concepts, how can they be supposed to think in these terms? A scattered few of the men may have been exposed to such words and ideas in half-forgotten college courses, but they have found in practice they had no use for a vocabulary unknown to their associates, superiors, subordinates, and fellow business men. Thus the most essential terms in which economists explain business conduct do not exist in the business man's vocabulary. Does this not prove that the explanations are unrealistic or definitely false?

Only an inexperienced researcher could draw such a conclusion. The technical terms used in the explanation of an action need not have any part in the thinking of the acting individual. A mental process in everyday life may often be most conveniently described for scientific purposes in a language which is quite foreign to the process itself.

To ask a business man about the "elasticity of demand" for his product is just as helpful as inquiring into the customs of an indigenous Fiji Islander by interviewing him in the King's English. But with a little ingenuity it is possible to translate ideas from the business man's language into that of the economist, and *vice versa*. Questions such as "Do you think you might sell more of this product if you cut the price by 10 per cent?" or "How much business do you think you would lose if you raised your price by 10 per cent?" will evoke intelligent answers in most cases provided the questions are readily reformulated and adapted to the peculiarities of the particular man and his business. Often it will be necessary to know a good deal of the technology, customs and jargon of the trade, and even of the personal idiosyncrasies of the men, before one can ask the right questions. A set formulation of questions will hardly fit any large number of business men in different fields and, hence, questionnaires to be filled out by them will rarely yield useful results.

Rationalizations of Decisions or Actions

Psychologists will readily confirm that statements by interviewed individuals about the motives and reasons for their actions are unreliable or at least incomplete. Even if a person tries to reconstruct for himself in his memory the motives and reasons for one of his past actions, he will usually end up with a rationalization full of afterthoughts that may make his actions appear more plausible to himself. Explanations given to an interviewer or investigator are still more likely to be rationalizations in terms that may make the particular actions appear plausible and justified to the inquirer. In order to be understood (and respected) the interviewed person will often choose for his "explanations" patterns of reasoning which he believes to be recognized as "sound" and "fair" by others. Most of these rationalizations may be subjectively honest and

truthful. It takes an experienced analyst to disentangle actual from imaginary reasons, and to separate relevant from irrelevant data, and essential from decorative bits of the information furnished. Written replies to questionnaires are hopelessly inadequate for such purposes.[22]

Questions of business policy are particularly difficult objects of inquiry because the business man usually is anxious to show by his answers that he is intelligent, well informed, and fair. The standards of fairness and business ethics to which he wishes to conform are often those which he believes are accepted by his lawyers, accountants, customers, competitors, fellow citizens, economists and whatnot. Only through detailed discussions of different situations and decisions, actual as well as hypothetical, will an investigator succeed in bringing out true patterns of conduct of the individual business man.[23]

A. *Average Cost and Price*

One of the conclusions of casual or systematic empirical research on the business firm is that business men do not pursue a policy of maximizing profits, and of pricing according to the marginal cost and marginal revenue principle, but instead follow rules of pricing on the basis of average cost calculations even where this is inconsistent with profit maximization.

We shall attempt to reinterpret the findings of systematic research along these lines. For this purpose we must first clear up some misunderstandings which appear to have contributed to the support for the average-cost theory of pricing.[24]

Averaging Fluctuating Costs and Prices

In discussions with business men I have found that two different types

[22] *Cf.* George Katona, *Price Control and Business* (Bloomington, Ind., 1945), p. 210. He states that "only detailed interviews can probe into the motives behind business decisions."

[23] For further comments on the difficulties of good empirical research on business conduct, see my paper "Evaluation of the Practical Significance of the Theory of Monopolistic Competition," *Am. Econ. Rev.*, Vol. XXIX (1939), p. 233. After discussing the policies of my former business partners I concluded (p. 234): "An investigator who would have based his findings on their answers to questionnaires or even on personal interviews, would have come to erroneous results. An investigator who could have seen all the actually or potentially available statistics would have come to no results at all. The only possibility for a fruitful empirical inquiry into these problems lies, I think, in the more subtle technique of analyzing a series of single business decisions through close personal contact with those responsible for the decisions."

[24] According to modern theory price equals average cost (inclusive of normal profit) chiefly under the pressure of competition. The individual firm will charge a price above or below average cost depending on the situation and in line with the marginal calculus. However, when price has risen above average cost, other firms will expand production and new firms will enter the industry and their competition tends to reduce price to the average cost level. Thus it is not the price policy of the individual firm but the pressure of actual or potential competition which makes prices equal to average cost. In contrast with this, the theory advanced by the critics of marginal analysis asserts that firms set their prices according to average cost regardless of the state of competition and regardless of the market situation.

of averages must be distinguished: averages over time and averages as a function of the volume of output.

Selling prices frequently fluctuate over time, not only cyclically and seasonally but during the week or the day. In calculations for investment, cyclical price fluctuations will be taken into account and average prices will be estimated. In planning the production of seasonally demanded goods—summer dresses, swimming suits, winter sport clothes, Christmas toys—price discounts for off-season sales will be counted into the average selling price. Hotels in resorts may charge preferential rates for guests arriving on Tuesdays and leaving on Thursdays; wholesale grocers will dispose of over-ripe fruit and vegetables at reduced prices; public utilities may charge lower rates to industrial off-peak customers; in all these cases the firms will have to figure out their average revenue or average price.

Costs may show similar fluctuations over time. Raw materials and fuel prices may vary cyclically and seasonally, electric power rates even over different hours of the day. Seasonal changes of the weather may cause cost differences in several technical processes—natural instead of artificial heat for drying when wind, temperature and humidity are favorable; hydroelectric instead of steam-generated power when rivers carry sufficient water; and so on. These and hundreds of other reasons call for calculations of average costs by the affected business firms.

The average revenues and average costs which must be calculated to take care of such variations over time are not in the least inconsistent with the marginal revenue and marginal cost principles. Indeed, if increases in output are under consideration, the marginal changes of revenue and cost as functions of output will have to comprise any changes over time that will affect revenue or cost. That the firm figures with these averages over time does not mean that it makes its decisions concerning price policies on the basis of an average-cost rule rather than the maximum-profit rule.

Actual versus *Potential Average Costs*

The absence of the expressions "marginal cost" and "marginal revenue" from the business man's vocabulary and the fact that he usually explains his price policy in terms of "average cost" account for a good part of the skepticism of the empiricists. Yet, the words used are not indicative of the lines of thinking; the marginal calculus may be followed without pronouncing or knowing any of the terms in question.

In the economist's jargon, the business man who considers taking more business is supposed to say to himself: "At the increased volume of output, marginal cost will be this much and marginal revenue that much." (Statement I.) In a literal translation into everyday language, he would

say, "The increase in production will cost me this much and will bring in that much." (Statement II.) He could say it also in a different version: "The increase in business will raise total costs from this to this much, and total receipts from that to that much." (Statement III.) These statements are absolutely equivalent, all expressing the marginal calculus of variations.

The same thing can also be expressed in a fourth, much more complicated way: "The increase in business will change average cost from this to this much, and average price from that to that much; it will, therefore, change profits by changing the margin of so and so much, times an output of this much, to a margin of so and so much, times an output of that much." (Statement IV.) With all its complications the statement is still equivalent to the former ones. It is a bit foolish to divide total costs and receipts by the output figures just in order to multiply afterwards the differences again by the output figures; but it is not incorrect. The average cost figures as such are, of course, irrelevant in the calculation.[25]

The average cost figures, in spite of their prominent place in our business man's complicated statement, had no place in his actual decision. The decision was based on the profitableness of the added business. When not only the current but also the potential average cost—that is, the average cost at a different production volume—and also the change in total receipts are considered, then the reasoning is true marginal calculus, not average-cost reasoning as some mistakenly believe.

Average-Cost Pricing as the Lawyer's Ideal

Generations of lawyers have accepted and proclaimed the fairness of the average-cost standard of pricing. Decades of regulatory experiments and arguments, and a long history of court decisions, have emphasized the average-cost principle as the just basis of pricing. Is it then surprising that business men try to explain their pricing methods by average-cost considerations?

[25] This can be easily illustrated by assuming any set of figures. Assume that the firm considers taking new orders for 1,000 tons of product, reducing its average price. Statement IV might read: "The increase in business from 10,000 tons to 11,000 tons will raise total cost from \$80,000 to \$86,900 and, hence, will reduce average cost from \$8.00 to \$7.90; it will raise total receipts from \$99,500 to \$107,800 and, hence, will reduce average price from \$9.95 to \$9.80; it will, therefore, raise profits by changing a margin of \$1.95, times an amount of 10,000, *i.e.*, \$19,500, to a margin of \$1.90, times an amount of 11,000, *i.e.*, \$20,900. Let's take the business."

Statement III would read under the same circumstances: "The increase in business will raise total costs from \$80,000 to \$86,900, that is by \$6,900, and will raise total receipts from \$99,500 to \$107,800, that is by \$8,300. Let's take the business."

Statement II on the same situation would read: "The increase in production will cost me \$6,900 and will bring in \$8,300. Let's take the business."

Statement I, finally, would read: "At the increased volume of output, marginal cost will be \$6.90 and marginal revenue \$8.30. Go ahead."

Corporations in regulated industries are sometimes caught in their official price justifications: a change in the market situation may make it wise and profitable to change the selling price, but that price has been anchored to an average-cost calculation which it is now difficult to disavow. The companies cannot very well submit to their regulatory commissions revised average-cost calculations every time market conditions change. They have to put up with relatively inflexible prices which, were it not for the regulatory authorities, might be as much against their own interests as against those of the consumers.

More often, however, the business man is not conscious of the fact that he uses average-cost considerations merely as rationalizations or justifications. Selling with high profit margins might indicate monopoly and "squeezing of the consumer"; selling below cost might indicate unfair competition and "cutting the throat of the competitor." As a good citizen the business man wishes to avoid both these wicked practices. As long as he can justify his prices as covering "average cost plus a fair profit margin" he can say, to others as well as to himself, that he is living up to the accepted standards of law and decency. If this "fair profit margin" is at times a bit generous and at other times rather thin, he can still justify his price. (That such variations betray his "explanation" of this pricing method as incomplete or untenable may escape his attention as well as that of his inquirers.)

Average-Cost Pricing as the Accountant's Ideal

Selling price must cover average cost inclusive of overhead and fair profit margin if the business enterprise is to live and to prosper. A good accountant regards it as his duty to watch over the soundness of the firm's pricing methods and to warn against prices below full cost.

Practical and academic accountants have sometimes attacked the marginal-cost principle as a fallacy conducive to practices that are liable to result in business losses. They have reasoned that a general application of differential cost considerations might mean that firms forget that they ought to recover their overhead in *some* part of their business.

Reasoning of this sort reveals a twofold misunderstanding of the marginal principle. (a) That marginal cost does not "include" fixed overhead charges need not mean that it will always be below average total cost; indeed, marginal cost may equal or exceed average cost. (This will always be true for volumes of output at or beyond "optimum capacity" of the firm.) (b) To use marginal cost as a pricing factor need not mean that price will be set at the marginal cost level. Indeed, this will never be done. In the exceptional case of pure competition, price cannot be "set" at all but is "given" to the firm and beyond its control; and marginal cost will be equal to price not because of any price policy but only because

of adjustments in the firm's production volume. In the normal case of monopolistic competition, the firm will never charge a price as low as marginal cost; it will charge a price at which marginal revenue is equal to marginal cost, and this price must therefore be above both.

It is a stupid misunderstanding to believe that the use of marginal cost in the business man's pricing technique implies an advice that selling price should be set at the marginal cost level. Marginal cost and marginal revenue considerations mean nothing else but what a business man means when he asks himself: "Could I get some more business and would I want it under the conditions under which I could get it"?

The idea, held by some accountants, that pricing on the basis of the marginal principle would sacrifice profits is the opposite of the truth—except in one very special sense: where the average-cost rule has been used as a monopolistic device, resort to the marginal principle might be taken to mean abandonment of a cartel arrangement in the industry and "outbreak" of unrestricted competition.

Average-Cost Pricing as a Cartel Device

In times of depression business men often discover that it is wiser to lose only a part rather than all of their overhead cost; that it is better to sell at prices below full cost than to stick to prices which would cover all costs but at which they cannot sell. They usually deplore these deviations from the full-cost principle of pricing and argue that nobody would *have* to sell below cost if nobody ***did*** sell below cost.

Price fixing among producers or official price codes may in such situations succeed in the maintenance of a monopolistic level of price in spite of strong temptations for competitive price cutting. Tacit understandings about the observation of average-cost rules of pricing sometimes constitute an alternative way of achieving price maintenance in a declining market. Moral suasion in the direction of "good accounting" and of "sound pricing" on the basis of "full cost" may be an effective device of domestic price cartels (through trade associations or in the form of tacit understandings).

Outright price fixing, just as any other cartel agreement, is a device to affect the estimates of demand conditions for the products of the individual firms. Only if demand as seen by the individual seller is effectively changed through his anticipations of serious reactions on the part of his competitors and fellow cartel members will he find it advantageous to restrict his output to the extent necessary for the maintenance of the agreed price. The essential effect of the agreement is upon the elasticity of the expected demand. As a rule, elasticity becomes absolutely zero (that is, the demand curve breaks off abruptly) at the largest volume of output which the individual cartel member thinks he can sell at the

fixed price. If he considers price cutting in contravention of the agreement as a practical alternative, the demand curve will not break off but continue downward with reduced elasticity—reduced because of the risk of penalizing or retaliatory actions.

The general adoption of an average cost rule is in effect a price agreement among the members of the particular industry. Where a trade association announces a representative "average cost," the announced value need not tally at all with the average cost of an individual firm. Where cost conditions are believed to be very similar throughout the industry, the understanding may be informal and tacit. It may be made entirely a matter of "business ethics" not to sell below average cost plus fair profit margin. For the firm which strictly observes this ethical code the demand curve breaks off abruptly at the output it can sell at that price. The average cost calculation of that firm takes the place of the fixed cartel price and is the essential determinant of its demand and marginal revenue considerations.

If a business man believes that the best policy for him in the long run is to stick to the cartel, this does not mean that he disregards the marginal principle. On the contrary, the feared consequences of breaking away from the cartel, its probable effects upon long-run demand and revenue, dictate his continued adherence. Likewise, if violations of the ethical code of average-cost pricing are feared to have adverse consequences, continued membership in this "ethical cartel" is not a departure from the marginal principle. The average-cost rule and the sanctions for violating it have the same sort of effects upon demand elasticity and marginal revenue which other types of price agreements have been shown to have.

Average Cost as a Clue to Demand Elasticity

Even without any ethical or unethical code prescribing an average-cost rule of pricing, average cost may be the most important datum for the estimate of demand elasticity. The elasticity of demand for any particular product is determined by the availability of substitutes. In order to estimate how much business a firm may lose if it raises its price, it will consider whether existing or potential competitors can supply competing products at the particular price. The elasticity of supply from competing sources determines the elasticity of demand for the firm's product. The supply from competing sources will depend on their actual or potential cost of production. And usually the best clue that a firm has to the production cost of competitors is its own production cost, corrected for any known differences of conditions.

Assuming that competitors have the same access to production factors, materials and technology, their production cost can not be much

different from that of a particular producer who may just be weighing the chances of a price increase. In the absence of any cartel arrangements he will have to count on his competitors to expand their business at his expense if he ventures to raise his selling price above average cost. Where he need not fear the capacity of existing competitors, but entry into the industry is relatively easy, he will have to reckon with newcomers' competition if he makes the business too attractive by allowing himself too generous a profit margin above average cost. Under such circumstances he will know that he stands to lose too much business and had better stick fairly closely to a price based on average cost.

Notwithstanding any rationalizations of this price policy, the reasons for it lie in the competitiveness of the industry resulting in a high elasticity of demand visualized by individual sellers.[26] To "explain" this price by reference to some emotional attachment to the average cost principle is to miss the mark. The rôle of average cost in the firm's pricing process in this case is to aid in gauging the elasticity of the long-run demand for its product.

Reasons and Variables

Seeing how many different rôles average cost may play in the pricing process without in the least contradicting the statement that marginal cost and marginal revenue determine output and price, one should realize the dangers of attempts to use utterances of business men as evidence against the correctness of marginal analysis.

Business men's answers to direct questions about the reasons for charging the prices they are charging are almost certainly worthless. Every single fact or act has probably hundreds of "reasons"; the selection of a few of them for presentation to the inquirer is influenced by the prejudices or old theories which the informant had impressed upon him by school, radio, newspapers, etc.

Except in the case of a genuine decision leading to a recent change of policy, one may say that an approach much more fruitful than that of asking about reasons *for* some policy is to ask about reasons *against* its alternatives. Instead of asking for explanations of the price actually charged or the output volume actually produced, questions about "why not more" and "why not less" are likely to yield more revealing results. But even these answers must be checked and double-checked through a network of cross-examination, segregating and isolating certain variables in a manner familiar to the scientist working with the calculus of variations and with the determination of partial derivatives.

[26] Where the average-cost rule is a cartel device, the elasticity of demand will be small or zero from the actually realized point on *downward*. When average cost is a clue to size up potential competition, the elasticity of demand will be high from the actually realized point on *upward*. The former prevents price reductions, the latter price increases.

Research on Actual Pricing Methods

On the basis of marginal analysis of the firm and the industry, we should expect for most industries that price in the long run would not deviate too much from average cost, yet that the firm would attempt to get better prices when it could safely get them and would not refrain from cutting prices when it believed that this would increase its profits or reduce its losses.

Now let us compare with this the findings of one of the empirical research undertakings which shook the researchers' confidence in the marginal principle and convinced them that business men followed the "full-cost principle" of pricing regardless of profit maximization. Inquiry was made through interview of 38 entrepreneurs.[27] "A large majority" of them explained that they charged the "full cost" price. Some, however, admitted "that they might charge more in periods of exceptionally high demand"; and a greater number reported "that they might charge less in periods of exceptionally depressed demand."[28] Competition seemed to induce "firms to modify the margin for profits which could be added to direct costs and overheads."[29] Moreover, "the conventional addition for profit varies from firm to firm and even within firms for different products."[30]

This is precisely what one should have expected to hear. Do these findings support the theory of the average-cost principle of pricing? I submit that they give little or no support to it. The margins above average cost are different from firm to firm and, within firms, from period to period and from product to product. These differences and variations strongly suggest that the firms consult other data besides or instead of their average costs. And, as a matter of fact, the reported findings include some that indicate what other considerations were pertinent to the price determinations by the questioned business men.

Of 24 firms which gave reasons for not charging higher prices, 17 were tabulated as admitting that it was "fear of competitors or potential competitors" and a "belief that others would not follow an increase." Another two stated that "they prefer a large turnover."[31] To me the 19 answers indicate that these business men were estimating the risk of losing business if they raised prices or, in other words, that they were concerned about the elasticity of demand.

Of 35 firms which gave reasons for not charging lower prices, 4 firms explained that they were members of price-fixing combinations; 2 stated

[27] R. L. Hall and C. J. Hitch, *op. cit.*, p. 12.

[28] *Ibid.*, p. 19.

[29] *Loc. cit.*

[30] R. L. Hall and C. J. Hitch, *op. cit.*, p. 20.

[31] *Ibid.*, p. 21.

that it was "difficult to raise prices once lowered"; and 21 referred directly or implicitly to their estimates of demand elasticity. (Nine firms: "Demand unresponsive to price"; one firm: "Price cuts not passed on by retailers"; eleven firms: "Competitors would follow cuts.") Only 8 firms gave reasons other than monopolistic price fixing or monopolistic elasticity considerations; these 8 were listed as having "quasi-moral objections to selling below cost."[32] Unfortunately the interviewers did not find out what these conscientious objectors to price cutting thought about the responsiveness of demand; and whether they would remain adamant if they were sure that a small price concession would produce a large increase in sales. I suspect that a cross-examination would have brought out the fact that the moral or quasi-moral views on price maintenance were regularly coupled with a very strong opinion that a price reduction would not produce sufficiently more business and, thus, would constitute useless sacrifice of profits.

In any event, there is little or nothing in the findings of this inquiry that would indicate that the business men observed an average-cost rule of pricing when such observance was inconsistent with the maximum-profit principle. On the other hand, there is plenty of evidence in the findings that the business men paid much attention to demand elasticities — which to the economist is equivalent to marginal revenue considerations.

The Absence of Numerically Expressed Estimates

Why should others in the face of this evidence have come to the conclusion that the marginal principle was not applied and profit maximization not attempted by the group of business men studied? How could others have failed to be impressed by the facts just recited?

It seems that their confidence in the conventional analysis was lost when they found to their surprise that the business man had no definite numerical estimates of the magnitudes relevant to the application of the marginal principle. They had assumed that a business man should "know" the elasticity of demand for his product, and now they were shocked to find "that the great majority of entrepreneurs were in profound ignorance with regard to its value."[33] A student who had expected to find exact estimates must indeed have been disappointed when most of his informants "were vague about anything so precise as elasticity."[34]

The inquirers found the same vagueness with regard to marginal cost estimates. While the entrepreneurs usually computed direct cost and

[32] *Loc. cit.*

[33] R. F. Harrod, *op. cit.*, p. 4. Concerning this discovery Mr. Harrod remarks emphatically: "This, indeed, must be regarded as one notable result of our inquiry."

[34] R. L. Hall and C. J. Hitch, *op. cit.*, p. 18.

total overheads "with some pains at accuracy,"[35] they could not furnish any data on marginal cost. He who expected that marginal cost and marginal revenue were equated on the basis of precise calculations must feel stultified. The student who had to do homework computing marginal cost and revenue figures to the second or third decimal point may feel befooled when he learns that the business man does not do anything of the sort. But to conclude from the absence of definite numerical estimates that the magnitudes in question were irrelevant in the conduct of the firms is a *non sequitur*. On the basis of the previous discussion of this subject (see above pp. 534 *ff.*) we should understand that the construction of a pattern for the analytical description of a process is not the same thing as the actual process in everyday life; and we should not expect to find in everyday life the definite numerical estimates that are part of the scientific pattern.

Apart from the absence of numerical estimates of marginal revenue and marginal cost it is difficult to see what other findings of the inquiry could have persuaded the researchers that they had disproved the theory of marginalism in the conduct of the firm. There is not a single proposition in the tabulated results of the inquiry that can not be fully harmonized with marginal analysis. The "Analysis of Replies to Questionnaire on Costs and Prices," which the researchers presented as an appendix to their report,[36] contains a wealth of illustrative material—illustrative, as I see it, of the application of the marginal principle to business decisions of the single firm.

B. *Marginal Productivity and Wage*

Empirical research designed to verify or disprove marginal productivity theory in the analysis of input of the individual firm is beset with difficulties. Few systematic endeavors have been made and none has led to any suggestion, however vague or tentative, of an alternative theory. Whereas in certain price research projects those who felt compelled to reject the marginal theory have advanced the average-cost theory of pricing as a substitute, no substitute theory has been forthcoming from those who decried marginal productivity theory.

Statistical Research

Empirical research on cost, price and output of the individual firm has resulted in several interesting attempts to derive marginal cost functions from statistical data; and also in one or two attempts to derive price elasticities of demand for a firm's products. But nobody, to my knowledge, has ever undertaken to construct from actual data a

[35] R. F. Harrod, *op. cit.*, p. 4.

[36] R. L. Hall and C. J. Hitch, *op. cit.*, pp. 33–45.

marginal net revenue productivity curve for a given type of labor employed by a firm. The difficulties are formidable and, since the raw material for the calculations could not come from any records or documents but merely from respondent's guesses of a purely hypothetical nature, the results might not be much more "authentic" than the schedules made up by textbook writers for arithmetical illustrations.

Statistical studies of the relationship between wage rates and employment in large samples of individual firms or industries would be nearly useless because we have no way of eliminating the simultaneous effects of several other significant variables, especially those of a psychological nature. An increase in wage rates may have very different effects depending on whether the employer (1) (a) has foreseen it, (b) is surprised by it; (2) (a) reacts quickly to it, (b) reacts slowly to it; (3) (a) expects it to be reversed soon, (b) expects it to be maintained, (c) expects it to be followed by further increases; (4) (a) assumes it to be confined to his firm, (b) assumes it to affect also his competitors, (c) believes it to be part of a nation-wide trend; (5) connects it with an inflationary development; or is influenced by any other sort and number of anticipations. Most of these moods and anticipations can be translated by the economist into certain shapes or shifts of the marginal productivity functions of the firms; but since the researchers cannot ascertain or evaluate these conjectural "data" for the large number of firms contained in a representative sample, statistical investigations of the wage-employment relation of individual firms are not likely to yield useful results.

Questionnaire on Employment

It has been pointed out above (p. 538) why the method of mailed questionnaires without supporting interviews is hopelessly inadequate for empirical studies of business conduct. Even the most intelligently devised set of questions would not assure reliable and significant answers. Questions designed to achieve the necessary separation of variables would be so complicated and call for so high a degree of "abstract thinking" on the part of the questioned business men that questionnaires of this sort would be too much of an imposition, and coöperation would be too small. Although the questions in Professor Lester's research project on employment did not even approach these standards, he received only 56 usable replies from 430 manufacturers whom he had asked to fill out his questionnaires.[37]

Professor Lester's questionnaires suffered not merely from the inherent weaknesses of the method but also from defects in formulation. These defects were so serious that even the most complete, reliable and intelligent

[37] R. A. Lester, *Am. Econ. Rev.*, Vol. XXXVI, No. 1, pp. 64–65.

answers could not have yielded significant findings. The business men were asked to rate the "importance" of several factors determining the volume of employment in their firms. No explanation was given whether this importance of a variable—that is, I presume, its responsibility for changes in the employment volume—should refer to (a) the frequency of its variations, (b) the extent of its variations, or (c) the effects of its variations. Surely, the variable rated as least important—perhaps because it varied less frequently than the others—may be just as strategic as any of those with higher importance ratings. What we really need to know, however, is not the *comparative* importance of several factors but rather the effects of variations of each factor separately while the others remain unchanged.

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If I want to know by how much an increase in the price of spinach may affect its consumption in an individual household, I shall not get very far by asking the householders to give a percentage rating to each of several listed factors that are believed to be "important" influences on spinach consumption. If it were tried, we should not be surprised to find changes in family income, the number of children and guests at dinner, and the notoriety of Popeye the Sailor's gusto for spinach, receiving much higher percentage ratings than changes in the price of spinach. (In a number of households price may not be a factor at all.) Nobody, I hope, would conclude from such a poll that price is an unimportant factor in the consumption of spinach.

Not a good analogy

Yet Professor Lester followed just this procedure when he wanted to find out how important wage rates were in determining the volume of employment in the individual firm. He asked the executives of the companies to "rate" the following factors "in terms of the percentage of importance of each":

a. Present and prospective market demand (sales for your products, including seasonal fluctuations in demand).
b. The level of wage rates or changes in the level of wages.
c. The level of material costs and other non-wage costs and changes in the level of such non-labor costs.
d. Variations in profits or losses of the firm.
e. New techniques, equipment, and production methods.
f. Other factors (please specify).

Of these items the first unquestionably excels all others in frequency and extent of variations. That it won first prize in Professor Lester's importance contest is therefore not surprising. If several respondents gave ratings to item d (variations in profits or losses) and at the same time also to other items, they obviously did not realize that this variable comprised all the others. Professor Lester does not explain why he listed it when he knew that it was not "completely independent" and

that "for example, wages affect profits."[38] Nor does he state whether the 43 firms which failed to mention changes in wage rates as an important factor meant that they would continue in business and continue to employ the same number of workers regardless of any degree of wage increase. If this is what they meant, they can hardly be taken seriously. If they meant something else, then it is not clear just what the replies should indicate about the probable effects of wage increases upon employment.

The strangest thing about Professor Lester's list of possibly important variables is that all—except f, the unspecified, and d, the all-inclusive profit-and-loss item—are essential variables of the very analysis which he means to disprove. The prize-winning item, a, the demand for the product, is certainly a most crucial determinant of marginal productivity. (See above pp. 529 and 531.) Items c, non-labor cost, and e, production techniques, are two other determinants of marginal productivity. How Professor Lester came to think that the results of this poll would in any sense disprove or shake marginal productivity analysis remains a mystery.

Questionnaire on Variable Cost

Professor Lester asked his business men also some questions on unit variable costs and profits at various rates of output. The information obtained in answer to these questions might have been useful had it not been based on an undefined concept of "plant capacity." Unfortunately, it must be suspected that not all firms meant the same thing when they referred to "100 per cent of capacity."

Economic theorists use different definitions of capacity. One widely-used definition marks as 100 per cent of capacity that volume of output at which short-run total cost per unit is a minimum; another definition fixes the 100 per cent mark at the output at which variable cost per unit is a minimum. The former definition implies decreasing average total cost, the latter decreasing average variable cost, up to "100 per cent capacity." Professor Lester after painstaking empirical research arrives at the following finding:

> The significant conclusion from the data in this section is that most of the manufacturing firms in the industries covered by this survey apparently have decreasing unit variable costs within the range of 70 to 100 per cent of capacity production. . . .[39]

Has Professor Lester asked himself whether this is not merely a self-evident conclusion implied in the definition of capacity used by his respondents?

[38] *Ibid.*, p. 66.
[39] *Ibid.*, p. 71.

The steepness of the reported decline in unit variable cost, however, would be an interesting observation—if the data were reliable. (Few of Professor Lester's firms had "constant unit variable costs," or anything approaching this situation, over a considerable range of output.[40]) It is rather peculiar that unit variable costs should decrease steeply (at an increasing rate!) down to a certain point and then abruptly start rising —as one must infer from the term "100 per cent capacity." Where equipment is not utilized for 24 hours a day, the steep decline and abrupt rise of the unit cost is somewhat questionable.

Professor Lester, nevertheless, has sufficient confidence in his findings to draw conclusions—conclusions, moreover, which could not even be supported if the findings were of unquestionable validity. He states:

> If company output and employment policies are based on the assumption of decreasing marginal variable cost up to full capacity operations, much of the economic reasoning on company employment adjustments to increases and decreases in wage rates is invalid, and a new theory of wage-employment relationships for the individual firm must be developed.[41]

This deduction simply does not follow from the premises. There is no reason why decreasing marginal costs should invalidate the conventional propositions on factor cost and input. Professor Lester could have found dozens of textbook examples demonstrating the firm's reactions under conditions of decreasing marginal cost.

Professor Lester may have been deluded by a rather common confusion between related concepts: from decreasing marginal cost he may have jumped to the assumption of increasing labor returns,[42] and from increasing physical returns he may have jumped to the assumption of increasing marginal productivity of labor. Both these jumps are serious mistakes. For instance, the very conditions which may cause a firm to restrict the employment of labor to a volume still within the phase of increasing physical productivity per unit of labor are likely to result in decreasing marginal net revenue productivity of labor. These conditions are:

(a) an indivisibility of the firm's physical plant facilities,[43] combined with either (or both),

(b) a low elasticity of the demand for the firm's products[44] or (and)

[40] *Ibid.*, p. 70.

[41] *Ibid.*, p. 71.

[42] *Ibid.*, p. 68.

[43] *I.e.*, the firm cannot adjust the number of machines or production units to smaller production volumes but must instead produce small outputs with an inefficiently large productive apparatus.

[44] *I.e.*, the firm realizes that it can charge much higher prices for smaller outputs or cannot dispose of larger outputs except with substantial price reductions.

(c) a low elasticity of the supply of labor to the firm.[45]

The first condition, (a), makes a phase of increasing physical productivity of labor in the firm a practical possibility; the other conditions, (b) or (c), make that phase relevant for actual operations by providing the pecuniary incentive to operate the plant inefficiently. Condition (b), the low elasticity of demand for the product, will cause marginal net revenue productivity of labor to be diminishing in a range of employment in which average or even marginal physical productivity of labor are still increasing.

It is not possible from Professor Lester's exposition to find out whether his failure to see these relationships was at the bottom of his faulty theorizing on this point. In any event, his findings on variable costs contain nothing that would even vaguely bear on the validity of marginal analysis.

Questionnaire on Adjustments

Professor Lester's fact-finding and theorizing on substitution between labor and capital and on other adjustments of the firm to changes in wage rates are also marred by inconsistencies and misunderstandings.

After trying to make the most of increasing returns to labor and only a few lines after referring to "unused plant capacity," Professor Lester asserts that "most industrial plants are designed and equipped for a certain output, requiring a certain work force. Often effective operation of the plant involves a work force of a given size."[46] To operate within the phase of increasing returns is to operate inefficiently, that is, with an employment of less labor with a given plant than would be compatible with efficient operations. (Because an increase in employment would raise output more than proportionately.) "Effective operation," on the other hand, logically implies employment at or beyond the point where diminishing returns set in. Professor Lester does not seem to be clear which way he wants to argue.[47]

Professor Lester seems to think that substitution between capital and labor can occur only in the form of installation of new or scrapping of existing machinery[48] and that it is supposed to occur "readily" and would, therefore, be "timed" with the wage changes.[49] These are rather common but nevertheless mistaken views.

[45] *I.e.*, the firm realizes that it can enjoy much lower wage rates at lower employment levels or cannot obtain more labor except with substantial wage increases.

[46] *Amer. Econ. Rev.*, Vol. XXXVI, No. 1, p. 72.

[47] Absolutely fixed proportions between factors of production would imply that short-run marginal productivity of labor drops precipitously to zero at the full capacity level of employment.

[48] *Am. Econ. Rev.*, Vol. XXXVI, No. 1, p. 73. See my comments, above, pp. 530–31.

[49] *Ibid.*, pp. 73 and 74.

Professor Lester does not discuss a glaring contradiction in his findings: On the basis of replies to one questionnaire he states that his data indicate "that industry does not adapt its plant and processes to varying wage rates in the manner assumed by marginalists."[50] But on the basis of another questionnaire about adjustments to increases in relative wages, he reports that the introduction of "labor-saving machinery" was given the highest rating in relative importance by the questioned firms whose labor costs were more than 29 per cent of total cost.[51]

The last-mentioned questionnaire apparently was designed to show that wage increases had no important effects upon employment. Six alternative adjustments to increases in relative wages were listed and manufacturers had to give percentage ratings for relative importance. In this popularity contest an item called "deliberate curtailment of output" got the booby prize. Quite apart from the fact that the words were loaded against this item, the result is not in the least surprising. For it is a well-known fact that where competition is not pure (as it rarely is in industrial products), output adjustments to higher production costs take place by way of changes in selling price. Price and product adjustments were another of the alternative items and scored rather well in the poll. If all employment-reducing adjustments—labor-saving machinery, price increases, and deliberate output curtailment—are taken together, they clearly dominate in the importance ratings by the firms.[52] This, or anything else, may not mean much in such an "opinion poll," but it certainly does not prove what Professor Lester wanted to prove. Nevertheless, he contends that "it is especially noteworthy that deliberate curtailment of output, an adjustment stressed by conventional marginal theory, is mentioned by only four of the 43 firms."[53] And he concludes that marginal analysis is all but done for, that "there can be little doubt about the correctness of the general results" of his tests[54], and that "a new direction for investigations of employment relationships and equilibrating adjustments in individual firms" is indicated.[55]

C. *Conclusions*

I conclude that the marginal theory of business conduct of the firm has not been shaken, discredited or disproved by the empirical tests discussed in this paper. I conclude, furthermore, that empirical research on business policies cannot assure useful results if it employs the method

[50] *Ibid.*, p. 73.
[51] *Ibid.*, p. 78.
[52] *Ibid.*, p. 78.
[53] *Ibid.*, p. 79.
[54] *Ibid.*, p. 81.
[55] *Ibid.*, p. 82.

of mailed questionnaires, if it is confined to direct questions without carefully devised checks, and if it aims at testing too broad and formal principles rather than more narrowly defined hypotheses.

The critical tone of my comments on the research projects discussed in this paper may give the impression of a hostile attitude towards empirical research as such. I wish to guard against such an impression. There should be no doubt that empirical research on the economics of the single firm is badly needed, no less than in many other fields. The correctness, applicability and relevance of economic theory constantly need testing through empirical research; such research may yield results of great significance.

Sharp criticism of bad research can be constructive in two respects: it may save some of the waste of time which the published research findings are apt to cause if they remain undisputed and are allowed to confuse hosts of students of economics; and it may contribute to the improvement of research. The chief condition for improved research is a thorough understanding of the theories to be tested. Supplementary conditions are a certain degree of familiarity with the technological and institutional peculiarities of the fields or cases on which the research is undertaken and a grasp of the research techniques employed.

PROSPECTIVE NATIONAL INCOME AND CAPITAL FORMATION IN THE UNITED KINGDOM

By PHILIP S. BROWN*

I. *Introduction*

Even before the war the United Kingdom had fallen behind the United States industrially to an extent that is not generally realized. Output per worker in manufacturing as a whole was between one-third and one-half as great as in the United States.[1] In coal mining, output per man-shift in 1938 averaged 1.14 long tons, compared with 4.37 long tons in the United States. In building construction, labor productivity was probably 60 per cent that in the United States. In agriculture, public utility operation, the distributive trades, and in the performance of personal and business services, labor productivity appears also to have been less in Britain than in America, but the difference was, of course, much less than in manufacturing and mining. Shipbuilding is the only important industrial category in which a labor productivity is known to have been about the same in Britain and America.

The difference between British and American labor productivity before the war was not readily apparent merely from a comparison of living standards because a larger fraction of the population sought employment in the United Kingdom than in the United States and also because there was proportionally less involuntary unemployment in the United Kingdom. Also, residents of the United Kingdom received an appreciable net income from overseas investments and even drew

* The author is currently on leave from the Department of State.

[1] Comparative figures of British and American labor productivity, especially in manufacturing, have been the subject of recent controversy among British statisticians. However, the controversy does not, in the writer's opinion, provide any basis for doubting that the difference in productivity was within the range indicated above.

It must, of course, be borne in mind that the greater capital investment per worker in the United States, while it tended to make for lower production costs, increased indirect labor costs so that the difference between British and American real costs of production was never so great as the difference in man-hours directly utilized in mining coal, manufacturing automobiles, etc.

Recent discussion has been stimulated by the studies of L. Rostas, particularly his first article, "Industrial Production, Productivity and Distribution in Britain, Germany and the United States, 1935–37," *Economic Journal*, January 1943. This paper was the subject of discussion at a meeting of the Royal Statistical Society, 21 March 1944, the minutes of which are given in the Society's *Journal*, Part I, 1944. Interest has been further stimulated by several very good government reports dealing expressly with the causes of low labor productivity in the coal, textile, and building industries. These reports are included in the list of recent industry studies by government departments given at the end of this paper.

upon overseas capital in some years; in the immediate pre-war years they imported 200 to 300 million pounds' worth of goods annually for which they did not pay either in goods or services.

Six years of war have widened the gap between British and American labor productivity and the difference in living standards will be quite apparent even after reconversion to a peacetime economy has been achieved. The United Kingdom now has 8 to 10 per cent less domestic capital, exclusive of armaments, than it had before the war, whereas in the United States there has been large net capital formation since 1939. On international account the United Kingdom has incurred huge external obligations and lost a substantial part of its overseas investments; moreover, a further increase in external obligations and a further loss of gold and overseas investments are to be expected. Overseas receipts of interest and dividends have been reduced and some special trading privileges and investment opportunities have been lost.

Anxiety about prospective living standards has prompted the British public to elect a Labor government committed to supply directly more of the nation's wants and to supervise the production and distribution of goods generally. Increase in the direct employment of resources by the government and exercise of extensive price control will necessarily require the allocation of scarce materials on the basis of political considerations. Competitive bidding cannot be allowed to determine the allocation of scarce resources because the backlog of demand, supported by large and unevenly distributed personal and corporate savings, is so huge that in the absence of price control the distribution of many industrial and consumers' goods would be too inequitable. Thus, the allocation of scarce goods—and consequently the resulting distribution of labor—will have to be made by the government.

However, no over-all budget has been presented to Parliament. Neither the Capital Issues Committee nor the proposed National Investment Council promises to be a real planning body. Such indication as has been given, notably by the Chancellor of the Exchequer, of intention to influence the priority and timing of investment, stems from a desire to eliminate cyclical unemployment rather than to insure the allocation of resources to projects of greatest social utility and to avoid the bottlenecks that will occur if the various programs are not coördinated and tailored to fit the ava lable manpower and material resources.

The Labor government's failure to cast up its accounts in the form of a National Plan and to concentrate on the problem of increasing labor productivity is understandable. The ministers, and their staffs, are preoccupied with the government's legislative program. Moreover, it is obviously difficult to get on with reëquipment and plant expansion in industries where institutional charges are in progress, or in prospect.

It is true that institutional reforms have frequently been justified as a means of achieving a more equitable distribution of income and of preventing future unemployment, but it would be most unfair to conclude that Labor Party leaders are more concerned with the redistribution of income and the fear of future unemployment than with increasing national income and making generous provision for the formation of industrial capital.

The following attempt to estimate future national income may contribute to an appraisal of British economic capabilities. The year 1952 has been chosen because it is outside the period of transition to a peacetime economy and yet in most respects is within the foreseeable future. By 1952, those capital goods most urgently needed to balance production and redistribute workers to something like a normal pattern of employment will have been purchased from abroad or have been manufactured at home; the abnormal building repair program will have been completed; the school-leaving age will probably have been raised to 16; the military establishment is likely to have been shaken down more nearly to its normal peacetime size; current receipts and disbursements on international account should have been brought into balance, and repayments of interest and principal on sterling and dollar obligations will have begun.

II. *Population and Civilian Labor Force*[2]

The population of the United Kingdom in 1952 will probably be about 48.8 million, one million greater than in 1939.[3] Despite this prospective increase in total population, the number of persons under 40 years of age will be nearly two million less, as shown by the following estimates of population, by age groups.[4]

[2] The writer is indebted to Miss Edith Strickland of the State Department for her assistance and advice in making the population and labor force estimates contained in this paper.

[3] It is of interest to note that beginning in the early 1950's the number of women of child-bearing age will decline markedly and population is likely to fall thereafter. This inevitable decline in women of child-bearing age may be offset by larger families. If, for example, the 1944 birth rate of 66.1 per 1000 women aged 15–49, which was evidently the highest in 20 years, were maintained, the population would increase rather than decrease during the late 1950's and reach 50,850,000 by 1964.

A Royal Commission on Population, appointed in March 1944, is now conducting a comprehensive investigation in the causes and consequences of recent and prospective changes in Britain's population.

[4] The estimates for 1939 are based on the Register General's figures for England and Wales, adjusted to take account of persons in the British armed forces and of the populations of Scotland and Northern Ireland. Estimates of persons born after 1939 are based on pre-war birth and fertility rates in England and Wales. Recent pre-war German mortality tables were used to estimate the number of persons in each annual age group that would normally live to 1952, and then adjustment was made for war casualties. No adjustment was made for possible net migration to or from the United Kingdom.

Age Group	1939	1952	Change
	(In thousands)		
0–15	11,137	10,813	− 324
16–39	18,469	16,876	−1,593
40–64	13,937	15,799	+1,862
65 and over	4,266	5,335	+1,069
Total	47,809	48,823	+1,014

In view of the prospective increase in the school-leaving age to 16,[5] the labor force will be drawn from the 38 million persons who will be over 15 years old in 1952. By a series of deductions, shown below, the total labor force in 1952 is estimated at 23.3 million, and the civilian labor force at 22.6 million. (Unlike official labor force statistics, this estimate covers Northern Ireland and includes female workers over 59, male workers over 64, and domestic servants of all ages.)

		(In thousands)
Persons age 16 and over in 1952		38,010
Less		
(1) Students	200	
(2) Unemployables, age 16–64	340	
(3) Employable women, age 16–64, who will not seek employment	9,807	
(4) Employable men, age 16–64, who will not seek employment	150	
(5) Persons over 64 who will not seek employment	4,195	
		14,692
Total labor force		23,318
Less persons in armed forces		750
Civilian labor force		22,568

The most important deduction—and the one about which there is most uncertainty—is the number of employable women who will not seek outside employment when all legal compulsions for doing so are withdrawn. On the one hand, it is reasonable to suppose that full employment, better wages for women, and the fact that more women will have received vocational training and will have become accustomed to economic independence will cause more women to seek work in 1952 than sought work in 1939. On the other hand, the number of women aged 50–64 will be 440,000 greater than in 1939 and those aged 16–49 will be 475,000 less. Moreover, a larger number of young women will be students. On balance it would appear that about one-quarter of the wartime increase in employed women aged 16–64 will continue after the war; in other words, 41 per cent of women aged 16–64 who are not

[5] The recently enacted Education Bill stipulates that the school-leaving age is to be raised to 16 as soon as school facilities can be provided, and teachers trained. The raising of the school-leaving age to 15, effective April 1, 1947, has already been announced and it is probable that the school-leaving age will be raised to 16 before 1952.

students and not unemployable will seek employment in 1952, compared with 38.7 per cent in 1939 and 48 per cent in 1944.

The estimate (750,000) of persons in the armed forces in 1952 is less than two-thirds the number which the government expects to have in the armed forces at the end of 1946.[6] A full-time military force in excess of 750,000 would probably require compulsory service of over 12 months. The number of able-bodied boys reaching the age of 18 in 1952 will be less than 300,000, and it is unlikely that more than 450,000 additional persons will enlist voluntarily. (In June, 1939, after an intensified recruiting campaign and with a war looming ahead, voluntary recruits for the armed forces and auxiliary services totalled only 477,000.) On the one hand, conscription and full employment will tend to lessen the number of voluntary enlistments; on the other hand, if military pay (and other benefits) should be increased more than civilian wages (and social services), long-term military service might become more attractive. Two years' conscription, which would probably be necessary to maintain a full-time military force of 1,000,000 is most unlikely.

The total civilian labor force in 1939, including nearly one million 14- and 15-year-olds, appears to have been 22.9 million.[7] Thus, the estimated civilian labor force in 1952 will be about the same, or slightly less, than in 1939. The 1952 civilian labor force, working possibly fewer hours per week, will have to support a population one million larger than in 1939.

Whether income per person in 1952 will be less or more than in 1939 depends not only upon the size of the labor force relative to population

[6] The *New York Times* of March 5, 1946, reported Mr. Attlee as having announced to Parliament on the previous day that the government aimed to reduce Britain's armed forces to 1,200,000 by the end of 1946. Of the 1,200,000, about 100,000 would consist of trainees and the balance would be distributed as follows: Army, 650,000; Air Force, 275,000; Navy, 175,000.

[7] This estimate can be reconciled with the figure for the civilian labor force given in the *Ministry of Labor Gazette* of November, 1945, as follows:

		(In thousands)
Official figure for mid-1939		19,273
Additions to allow for		
1. Domestic servants and other categories of workers in Great Britain excluded from official statistics		
Male	545	
Female	1,400	
2. Older workers (other than domestic servants) in Great Britain		
Males age 65 and over	660	
Females age 60 and over	434	
3. Workers of all ages in Northern Ireland		
Males	425	
Females	200	
		3,664
Total civilian labor force of United Kingdom		22,937

but also upon (1) the quality of the labor force, (2) the extent to which the labor force is employed, (3) the complement of capital equipment and the quality of managerial direction, and (4) the amount of net receipts of interest and dividends from abroad. The change, if any, in the "quality" of the labor force is most difficult to assess but some pertinent observations can perhaps be made.

The remarkable prospective increase in the average age of the civilian labor force, as a result of the exclusion of 14- and 15-year-olds, the larger withdrawal of young men into the armed forces, and the changed age composition of the population, is reflected in the following estimates of the labor force in 1939 and 1952 by age groups.

Age Group	1939	1952	Change
	(In thousands)		
14–15	973	0	− 973
16–39	12,490	11,785	− 705
40–64	8,580	9,642	+1,062
65 and over	894	1,141	+ 247
Total	22,937	22,568	− 369

The significance of the change in the age composition of the labor force is debatable. So far as this writer knows, no studies have ever been undertaken to discover whether absenteeism is greater or less among older workers than among young workers. Likewise, it is not known whether the greater adaptability and other characteristics of young workers are more than offset or less than offset by the vocational experience and other characteristics of older workers. Another uncertainty is to what extent services performed by 14- and 15-year-old boys and girls may be discontinued and the effect of such discontinuance upon the productivity of other workers. The writer's guess is that the change in age composition will tend to raise average labor productivity.

By 1952, British workers will probably be more healthy than in 1939: the lower income groups even now receive better medical attention and more protective foods than they received in 1939, and by 1952 medical services will have been greatly expanded and the caloric value of food rations will have increased; housing will be at least as good as in 1939, and working conditions in factories will be better. The number of workers enrolled in vocational training courses has greatly increased and by 1952 this expansion of enrollment will more than compensate for the diminution of apprenticeship training during the war. The morale of workers may be improved by selective nationalization, full employment, a stronger bargaining position *vis à vis* employers, extended social services, and a generally improved political situation.

All in all, the "quality" of the civilian labor force is likely to be better

in 1952 than in 1939. Other factors, however, must be considered before the change in output per worker can be estimated.

In 1938 about 2,600,000 workers were unemployed.[8] The unemployment figure for 1952, used below, is 900,000, equal to 4 per cent of the estimated civilian labor force. This figure may be too high, in view of the progress already made in establishing new factories in "depressed areas" and the prospect (discussed in Section VII) that there will be no deficiency in the aggregate demand for goods and services. Wartime experience for whatever it is worth suggests that unemployment may average very much less than this when there is a high, effective demand for labor. However, taking account of possible labor strikes, the fluctuations in foreign demand for export goods, and other possible causes of unemployment in peacetime, 4 per cent is probably a reasonable estimate.

III. *Capital Depletion since 1939*

The pre-war national capital of the United Kingdom, exclusive of land, roads, armaments, gold, and overseas investments, was roughly £14 billion distributed about as follows:[9]

	(In millions of pounds)
Private producers' goods:	
Buildings, exclusive of R.R. property	800
Railways	700
Other industrial and commercial equipment and stocks	6,200
Farm buildings, equipment and livestock	500
Private consumers' goods:	
Houses	3,200
Other	800
Property of government and other public bodies:	
Buildings	400
Equipment	1,400
Total	14,000

During the war about £1.2 billion of this capital was destroyed by air bombardment and submarine attack and the remaining capital stock was probably depleted to the extent of about £1.3 billion (at pre-war prices). Some of the bomb damage had been made good by the end of 1945, and under-maintenance is partly offset by surplus war goods having value for peacetime uses, so that net capital depletion by the

[8] In making this estimate, the unemployment rate for non-insured workers was assumed to have been two-thirds the rate for insured workers, which was 12.9 per cent.

[9] The writer has boldly, perhaps indiscreetly, juggled some of the valuation figures of H. Campion *Public and Private Property* (Oxford Univ. Press, 1939), in order to get estimates appropriate to the above classifications. J. R. Hicks, *The Social Framework* (Oxford, 1942), makes certain rough adjustments in Campion's figures, including the separation of houses from other buildings, which the writer has used.

end of 1945 was possibly only £1¼ billion (at pre-war prices), equal to 9 per cent of capital goods, other than land, roads, and armaments, situated in United Kingdom before the war. The following itemization is an attempt to estimate net depletion up to the end of 1945. All of the figures, including official estimates of non-war capital formation, may be very inaccurate; in some cases, the figures are no more than informed guesses.

		In millions of pounds at 1938 prices
Destruction caused by direct war damage less repairs and replacements:		
1. Buildings and other property on land	725[10]	
2. Merchant marine	50[11]	
Net depletion as a result of failure to maintain stocks, make repairs, and provide for obsolescence:		
1. Government property	75[12]	
2. Privately owned producers' goods	840[12]	
3. Houses	200[13]	
4. Other durable consumers' goods	170[13]	
	—	2,060
Peacetime value of installations and goods manufactured for war purposes, including surplus property purchased from United States Government but excluding merchant ships		−800[13]
Net reduction in non-military capital goods situated in United Kingdom		1,260

The most conjectural of all the above figures is that of surplus war property. The British government in a memorandum presented during the recent Washington negotiations stated that "while these assets ['capital formation in the form of government war expenditure'] may have some peacetime use, their value for this purpose is not likely to be large."[14] This judgment would seem to be too pessimistic. War expenditures in 1939–44 for industrial facilities (factory buildings, plant equipment, coal mining machinery, docks, harbor works, public utilities, etc.)

[10] Total damage to property has been estimated (see *Statistical Material Presented During the Washington Negotiations*, Cmd. 6707, p. 13), as being equal to £860 million at 1938 replacement costs. Up to the end of 1944, £195 million at current prices had been incurred in making good war damage.

[11] The net reduction in the size of the merchant marine between September 3, 1939, and the end of 1945, exclusive of "returnable ships," was about 5.8 million deadweight tons. Taking £9 per ton as an average valuation for the pre-war fleet, the value (at 1938 replacement costs) of the 5.8 million tons lost and not replaced is £52 million. The depreciation of original and remaining fleet is presumably included under subsequent headings (see footnote 12).

[12] These figures are official estimates of "private net capital formation" and "net non-war capital formation of public authorities" for the period 1940–44. (*An Analysis of the Sources of War Finance and Estimates of National Income and Expenditures in the Years 1938 to 1944*, Cmd. 6623.) It should be noted that these figures are residual items, not based on direct estimates of constituent outlays. Moreover, the greater part of depreciation, normally met out of private outlays on current repair work, is excluded from capital account so that the above figures probably understate the amount of capital depletion of producers' goods.

[13] These figures are estimates made by the writer.

[14] Cmd. 6707, see n. 10.

amount to £1,300 million, and presumably most of these facilities will have substantial use in a peace economy. Even among war goods less convertible and/or less durable such as motor vehicles (£686 million), aircraft, naval vessels, ordnance, etc. (£7,134 million), clothing and other non-combat supplies (£1,000 million) airfields, camps, depots, etc. (£680 million), and remaining goods other than food (£1,267 million), there will certainly be a substantial residue having peacetime value.

In addition to expenditures at home, £3,597 million were expended abroad, a small part of which went to pay for the import of equipment useful for post-war production. Also about £100 million of surplus war property of the United States government has been acquired.[15] Any estimate of the peacetime value of all the surviving goods and installations manufactured for war purposes involves a good deal of guessing, but bearing in mind the large outlay for permanent installations, such as factories, machine tools, power stations, harbor facilities, airfields, roads, and hospital equipment, the judgment expressed in the White Paper cited above is probably mistaken.

Housing and other durable consumers' goods have certainly been greatly depleted, but whether the aggregate of producers' goods has decreased or increased is conjectural. If commercial and industrial property constituted one-fifth of the total bomb damage not replaced, and if producers' goods constitute four-fifths of the present value of surplus war property, then the above estimates suggest that the stock of producers' goods has been depleted by £450 million, or by about 5 per cent, since 1939. If, however, the value of government-owned surplus war stocks should turn out to be 50 per cent larger than estimated above, the present stock of producers' goods must be roughly equal to the prewar stock.

A survey of the capital position of individual industries tends to confirm the above computation that there has been some net depletion in producers' goods. The deterioration of railway buildings, roadbeds, and highways has been substantial; and the average age of both railroad rolling stock and automotive transport has greatly increased. Shipping tonnage is 25 per cent less and ships now in use are on the average inferior to those in use in 1939. In the case of mining, there have been some capital additions, particularly in surface mining which is relatively unimportant, but on balance there has certainly been capital depletion,

[15] The true value of such property may be more or less than £100 million. The only public indication of the value of such goods is the reference made thereto in the *Joint Statement Reciprocal Aid, Surplus War Property and Claims* that the amount due from the United Kingdom shall include "A net sum of $532 million for all other Lend-Lease and Reciprocal Aid items, and for surplus property and the United States interest in installations located in the United Kingdom and owned by the United States Government."

which is reflected in the marked reduction in output per man-shift, from 1.17 long tons in 1939 to 1.00 long ton in 1945.[16]

In the iron and steel industry there has been net depletion, since most of the wartime additions to plant will not be useful in meeting peacetime demands. In manufacturing, there has been marked capital depletion in textile, paper, brewery, glass, pottery, and other industries that have been least essential to the war effort; on the other hand, in the light-engineering field and in certain branches of the chemical industry there has been large net capital formation when account is taken of government-built and equipped factories.

Part of the 56 per cent increase in electric power output between 1939 and 1945 is attributable to new installations. Harbor facilities have been expanded. In the construction industry there has probably been capital formation, as a result of the acquisition of American earth-moving and other equipment, the building of kilns to dry lumber, etc. In the distributive trades and service industries, building deterioration (and destruction resulting from bomb damage) has been substantial and there has been a large depletion of stocks of goods for sale and of equipment (*e.g.*, cutlery and table linen of restaurants, gasoline pumps and stocks of automotive parts carried by local garages, shoe-repair machinery, and laundry equipment). In the case of agriculture, the livestock population has been reduced, grasslands have been plowed up, the soil has been depleted to some extent, and buildings have depreciated; however, such depletion and depreciation have probably been more than offset by an increase of roughly £100 million worth of farm machinery.[17]

The depletion of net external assets was much greater than the net depletion of domestic capital. Recorded disinvestment between September, 1939, and July, 1945, totalled £4.2 billion, of which £1.1 billion resulted from the sale and repatriation of overseas investments, £2.9 billion from the increase in obligations, and £.2 billion from the decrease in gold and dollar reserves.[18] Actual transfer abroad of securities was probably larger and also the destruction and depreciation of British-owned property in Europe and the Far East must have been substantial. Despite the probable excess of external liabilities over external assets in 1952,[19] the United Kingdom will continue to have a net income on ac-

[16] See Table 26 of *Monthly Digest of Statistics* No. 1, January, 1946.

[17] See press reports of address by Minister of Agriculture at Birmingham on September 2, 1945.

[18] Cmd. 6707, *op. cit.*, pp. 10–12.

[19] Prediction regarding the extent to which external assets may exceed external liabilities is hazardous not so much because of the uncertainty regarding the size of the "transition deficit" and the extent to which external obligations will be written down, but because of the uncertainty regarding the pre-war value of overseas investments and the extent to which retained investments will have appreciated in value as a result of the increase in world prices and the decline in interest rates.

count of interest and dividends, because the average rate of interest on both sterling and dollar obligations will be under 2 per cent, whereas the average yield on overseas investments will be greater.

IV. *Labor Productivity*

The presumption is that the productivity of British labor must *now* be appreciably less than in 1939, unless other factors have compensated for the depletion of domestic capital. To be sure, the net depletion of producers' goods is probably not in excess of two years' normal net additions to the stocks of such goods—and may be much less. However, labor productivity is not unaffected by the excessively crowded housing conditions, resulting from the destruction and deterioration of houses and from the increase in population since 1939. The efficiency of workers is lessened by lack of opportunities for relaxation and by an increase in domestic chores, discomforts, and anxiety. Moreover, the uneven distribution of bomb damage causes many workers to travel long distances to and from work and travel generally has become less pleasant and often difficult.

The adverse effects of capital depletion upon labor productivity may be partly offset by greater output per worker in the distributive and service trades. Under conditions of full employment, store clerks, waitresses, ticket-takers, and other employees of "tertiary industry" will probably handle more customers than they did before the war when there was substantial unemployment.[20] For many years, distributors will not offer as great a variety of goods as formerly, or as many supplementary services (including prompt service, which requires salespeople "waiting to serve"). Also "labor scarcity" will reduce, as compared with the pre-war years, the number of low-paid domestic servants and casual employees.

The adverse effects of capital depletion may also be partly offset by new inventions, improvements in production methods not dependent upon new capital, and by the greater efficiency of such capital goods as have been installed since 1939.[21] The following observations may serve to indicate the significance of recent inventions and the extent of improvements in production methods.

[20] Quite apart from restrictions on employment in "unessential industry" which have tended to cause store clerks, waitresses, conductresses, etc., to work harder and longer, there appears to be a tendency toward increasing returns, in the short run at least, in most distributive and service trades. In manufacturing, on the other hand, the pre-war variations of employment and output indicate a fairly constant relationship.

[21] Improvements attributable, on the one hand, to new capital and, on the other hand, to changed methods of production are often difficult to disentangle; indeed, the distinction is conceptually blurred in the case of many improvements which require both special capital installations and changed techniques, neither of which would be practical without the other.

Government research laboratories were greatly expanded and the exchange of information with the United States further increased the store of technical information. (The opinion has been expressed that the United States may have gained more than the United Kingdom by the exchange, since the United States possessed large, well-equipped laboratories and engineering capabilities to exploit the discoveries of British scientists.) Striking technological advances were made in the development of new weapons, but by and large the technology of peacetime industries has advanced far less than the technology of these industries would have been advanced under peacetime conditions. Moreover, since the lag between revolutionary inventions and their commercial exploitation on a large scale is typically a couple of decades, the more important recent inventions (such as those in the fields of electronics and nuclear physics) are unlikely to affect national income materially in the next few years.

In the realm of plant management and product design, a few industries have gained a good deal from their wartime experience in product standardization, job specialization, organization of assembly lines, and other techniques of mass production. This experience, however, has for the most part been restricted to certain branches of the light engineering and building industries, employing fewer than 15 per cent of the labor force in peacetime. The improvements to date in the coal, iron and steel, textile, paper, pottery, leather, brewery, food processing, tobacco, and other peacetime industries have been slight.

Those who talk of the great fillip given to British industry by the introduction of American production methods usually have in mind the increases achieved in a few war industries where mass production was most feasible; they do not take account of the over-all capital depletion; they forget that in other peacetime industries, assembly-line methods must be preceded by standardization, the introduction of special plant equipment, and accompanied by new marketing methods; finally, they not only overestimate the direct impact of recent technological developments on non-war industries, but they also fail to realize the barriers of unconcern that separate industry groups.

Likewise, the contention that the general level of managerial competence has somehow been raised is probably not valid. For six years many young men who would normally have received business training have been compelled to serve in the armed forces and have gained little or no industrial experience. To be sure, many deferments from military service have been made, the most notable being the sweeping exemption granted to technically trained men and to students of the physical sciences and of engineering, but most deferred persons have worked on problems unrelated to those of industry in peacetime.

Kaldor, in estimating future national income, assumes a 13 per cent increase in output per man-hour in 1948 over 1939. This figure, which is an average for all workers (including those in the distributive and service trades, who comprise 40 to 50 per cent of the labor force) is derived simply by projecting an annual increase of 1.3 per cent over this 10-year period. This figure, which he chooses because it is an average of the rates of annual increase in the two periods, 1914–24 and 1924–35, he regards as the "minimum probable" and says: "It appears fairly certain (from various statements made by responsible authorities) that the increase in productive techniques in the course of the present war is much more substantial than that of the last war; and it is by no means improbable that when peace returns the rise in productivity will be found to be even greater than what would have resulted from a mere continuation of pre-war trends."[22] It should be noted that Kaldor's figure of a 10 per cent increase in productivity per man-hour between 1914 and 1924 follows from a 10 per cent reduction in working hours, since home-produced real income per head was about the same in both years. Much of this increase in average man-hour productivity was doubtless directly attributable to the reduction in the excessively long hours of work in 1914, and it is not, therefore, valid to project such a trend. It is remarkable that Kaldor, when comparing the effects of the two great wars upon labor productivity, makes no mention of the enormous depletion of domestic capital since 1939.

The writer's guess is that output per employed worker will be about the same in 1947, after the initial difficulties of reconversion have been overcome, as it was in 1938. It remains to estimate the increase in productivity that is likely to occur in the five years, 1948–52.

During the period, 1924–38, there was substantial unemployment and net capital formation was much less than it would otherwise have been, averaging probably about £300 million a year. Also the occupied population increased by 11 per cent, so that roughly half of the new capital was required to provide the additional workers with housing and tools of production. Consequently, the average annual increase in capital goods of all kinds was probably less than one per cent.

After 1947, annual net capital formation will be larger as a result of more nearly full employment and of the deliberate restriction of consumption; also foreign credits, and possibly reparations to a small extent, may tend to augment capital formation during this period. Furthermore, almost all of the new capital will be available for a more intensive application. The population of the United Kingdom by 1952 will be only 2 per cent greater than in 1939 and the civilian labor force

[22] William H. Beveridge, ***Full Employment in a Free Society***, Appendix C (by Nicholas Kaldor) p. 370.

will probably be the same or slightly less than in 1939. Consequently, a more rapid rate of increase in capital per worker is to be expected during 1948–52. Moreover, since housing is likely to constitute about the same fraction of capital formation in 1948–52 as in 1924–38, the rate of increase in the stock of producers' goods per worker should also be much greater. The writer's estimate of the annual increase is about 3½ per cent a year, or 19 per cent in the five years, 1948–52.

If the amount of capital used in production were the only factor affecting output, then it would be reasonable to suppose that the rate of increase in output per man-hour would be less than the rate of increase in the stock of producers' goods. But there are, of course, other factors. As concluded in Section II above, the quality of the labor force may be expected to rise as a result of improved medical care, more food, slightly better housing, better working conditions, increased vocational training, and higher morale; this factor may be significant enough during 1948–52 to increase output per man-hour by about 5 per cent. Also a small allowance must be made for improvements in methods of production and distribution, not primarily dependent upon capital formation. Consequently, output per man-hour of the civilian labor force may very well increase at roughly the same rate as the stock of producers' goods, namely 3½ per cent a year, or 19 per cent in the five years 1947–51.

However, part of the increase in output per man-hour will doubtless be offset by a decline in working hours. In October, 1938, the average work week of nearly six million wage earners in those industries covered by the Ministry of Labor's inquiries was 46.5 hours. In July, 1943, the average was 50 hours and in July, 1945, 47.4 hours. The writer's guess is that the over-all reduction in 1952, compared with 1939, will be about 5 per cent.

Therefore, the increase in output per employed worker from 1948 to 1952 may be put at 14 per cent, or 2½ per cent per year, and in view of the previous judgment that labor productivity would be about the same in 1947 as in 1938, it follows that the increase in 1952 over 1938 will also be 14 per cent.

This procedure of estimation is admittedly unsatisfactory. It is not so crude, however, as the mechanical projection of the past trend of productivity,[23] which disregards the unprecedented effect of the war

[23] To project separate trends for agriculture, mining, heavy industry, textiles, light engineering, the distributive services, etc., and then to weigh each group by its past contribution to the national income would be even more absurd because of the very unequal effect of the war upon capital goods in various industries and because of the marked change in the distribution of employment. Moreover, the data necessary for estimating changes in output per worker for various groupings of workers is very inadequate and therefore the estimation of past trends would necessarily be unsatisfactory.

upon capital formation and the radical change in population trends that has recently occurred. Perhaps equally important, such a projection of the past changes in labor productivity disregards the very real prospect that there will be nearly full employment, at least during 1948–52, and that capital formation will be much more rapid than it was before the war.

V. *National Income in 1952*

By adopting the above judgments regarding the size of the civilian labor force in 1952, the extent to which this force will on the average be employed, and the average increase, compared with 1939, in output per employed worker, estimation of the product of the civilian labor force, at 1938 prices, is merely a matter of arithmetic.

	1938	1952
Civilian labor force	22,938,000	22,568,000
Less unemployed	2,600,000	903,000
Employed workers	20,338,000	21,665,000
Average product of civilian employees, at 1938 prices (product per civilian employee)	£ 216.4	£ 246.7
Product of civilian labor force, at 1938 prices (in millions of pounds)	£4,401	£5,345

Thus, the product of the civilian labor force may be 21 or 22 per cent greater than in 1938 because more persons will be at work and their average output will be greater.

It remains to take account of net income from abroad and of pay and allowances to members of the armed services. Domestically produced income was supplemented in 1938 by net receipts from abroad of £210 million on account of interest and dividends. In 1945, these receipts were only about £100 million,[24] equivalent to 50 or 60 million pounds at pre-war prices. By 1952, net receipts are likely to rise to about £130 million but their purchasing power will be only about £65 million at the pre-war price level.

Pay and allowances (in cash and in kind) of that part of the labor force employed in military service were £78 million in 1938. At 1938 pay schedules, an armed force twice as large as that which was maintained in 1938 would require an expenditure of £156 million. Actually the real rewards required to attract an equal number of volunteers in 1952, under conditions of full employment, will have to be larger and this will involve a transfer of real income from the civilian to the military sectors of the labor force. However, consistency requires in this instance that we accept the 1938 valuation of a soldier's services and not regard an increase in his remuneration as an increase in real national income.

[24] Cmd. 6707, *op. cit.*, p. 10.

An estimation of net national income in 1952 can now be made:

(In millions of pounds)

	1938	1952
Product of civilian labor force measured by 1938 prices	4,400	5,345
Net overseas income on account of interest and dividends in terms of 1938 purchasing power	210	65
Pay and allowances of armed forces at 1938 schedules	80	155
Net national income measured by 1938 prices	4,690[25]	5,565

VI. *Division of the National Product*

The division of the national product that occurred in 1938,[26] and a conjectural division for 1952, such as is likely to afford a sort of political equilibrium among competing demands of the various claimants, are as follows:

	1938 Thousands of pounds	1938 %	1952 Thousands of 1938 pounds	1952 %
Consumers' goods and services:				
1. Purchased by individuals and non-profit-making bodies	3,610	77.0	3,895	70
2. Purchased by public authorities	435	9.3	650	12
National Defense	350	7.4	500	9
Capital formation (net):				
1. Overseas	−70		50	1
2. In United Kingdom	365	6.3	470	8
Net national product	4,690	100.0	5,565	100

With population in 1952 one million greater than in 1938, presumably about £4,130 million of consumers' goods and services, in 1938 prices, would be required to restore the 1938 level of consumption. But because of the enormous depletion of consumers' goods and the abnormal volume of necessary repairs and replacements, the 1938 level of consumption can be restored only by an output per person above that of 1938.

The above estimate of consumers' goods and services in 1952 allows for a 10 per cent increase over 1938. About half of this increase is likely to be accounted for by increased purchases by public authorities of medical, educational, and other social services. As a result of increased social services and more equitable distribution of food and clothing, consumers will be appreciably better off in 1952 than in 1938. As com-

[25] The official estimate of net national income at factor cost (*i.e.*, after deducting indirect taxes) has been raised by £70 million to adjust for inventory losses resulting from price changes in order to arrive at the value of the national product at constant prices.

[26] The division of national product in 1938 can be computed from data given in Cmd. 6623, especially Table 7. The above figures exclude indirect taxes of £638 million; subsidies of £15 million are included in the figure for consumers' goods and services purchased by individuals and non-profit making bodies.

pared with 1943 and 1944, the output of consumers' goods and services will be nearly 50 per cent higher.[27]

The size of the armed forces predicted above is twice that of 1938 and if expenditures (measured in 1938 prices) were also twice as great, £700 million would be required. However, in 1938 the armament program was under way so that this comparison is not relevant. From 1925 to 1936, when there was no appreciable change in the size of the forces and no armament program, full-time personnel averaged under 350,000 and annual defense expenditures were about £115 million. In 1952, pay and allowances to military personnel are likely to be higher relative to the rewards of civilian workers; maintenance expenditures of the greatly expanded military establishment will be proportionately greater than the increase in personnel, despite the present surplus of many supplies; also, the expenditure on new weapons will surely be several times greater than annual expenditures in the period 1925–36, when equipment generally deteriorated and became obsolete. Consequently, an up-to-date military establishment commensurate in size with the prospective number of persons in full-time service may require about £500 million in 1938 prices (exclusive of indirect taxes on goods purchased) and thus constitute about 9 per cent of net national expenditures at factor cost, compared with 7.5 per cent in 1938, and 50 per cent in 1944. About one-third of the military outlay will be required for pay and allowances, and the balance for operational expenses, repairs, developmental work, and the manufacture of new weapons.

It is plausible, and probably valid, to argue that the United Kingdom might be militarily stronger 10 or 20 years hence if resources were currently diverted from maintenance of a military establishment to the formation of industrial capital, especially in view of the possibility that the present types of weapons and the present type of military training may have much less defensive value in the future. However, the British leaders are alert to present dangers and there is no likelihood that security in the near future would be sacrified for security in the distant future even if the choice were recognized.

The government will probably have committed itself to repayments, on both dollar and sterling obligations, equivalent to about £50 million at 1938 prices. If these repayments are financed out of current income, then £50 million fewer goods and services will be available for domestic use. A net outflow of capital may, of course, not occur; indeed, if the prospective yield on new investment is greater at home than abroad,

[27] Consumers' expenditures (adjusted for price changes, indirect taxes, and subsidies) were 22 per cent lower in 1943, and 20 per cent lower in 1944, than in 1938. These figures do not take full account of the marked qualitative deterioration of goods and services. On the whole, private and public expenditures for current civilian consumption probably yielded 25 per cent less satisfaction than in 1938.

it is to the advantage of the United Kingdom to finance necessary capital repayments by borrowing or by the sale of overseas investments. However, in the absence of foresight about comparative yields, it is probably best to assume that repayments on dollar loans, commencing in 1951, will be financed out of current income.

The housing goal appears to be about 400,000 new houses annually. This goal can probably be achieved by 1952, when the bulk of the present backlog of repairs has been reduced and when the manufacture of building supplies and the partial prefabrication of houses will have been greatly increased. If it be assumed that 200,000 new houses plus normal repairs to old houses approximately offsets annual depreciation and obsolescence, then the balance of residential construction can be regarded as net capital formation. New houses, which, on the average, will have 20–30 per cent more floor space and will be better equipped than houses built before the war, will probably be worth about £750 apiece, in 1938 prices, so that about £150 million of net capital formation will consist of residential construction.

The London *Economist* has strongly objected to so large a diversion of resources to housing. It has argued that the need for industrial reequipment is more urgent, that the number of families is likely to commence to decline in a decade or so, and that it is desirable to reserve a substantial part of the rehousing program for the time when there may be prospect of unemployment. But regardless of whether one deplores or applauds the large allocation of resources to housing, it appears that such an allocation is politically necessary and that the government is getting on with the job.

The remaining £320 million of national product will be available for reëquipping and expanding domestic agricultural, industrial and commercial facilities and for increasing stocks of raw materials, goods in process of manufacture, and finished goods in the hands of distributors. This is probably more than has been made available for such purposes in any past year and would probably be sufficient to prevent a further widening of the gap between British and American labor productivity. Indeed, if the more up-to-date factories were operated two or three shifts a day, the increase in labor productivity might be such as to reduce the gap. At present, however, it is impossible on the basis of publicly available data to predict, except perhaps in the case of coal, how much new investment is necessary to achieve a specific increase in labor productivity. It is in the drawing up of specific investment plans for individual industries and in estimating the marginal yields (in terms of real savings of labor and materials) of such investments that the most constructive planning could be achieved.

In the case of coal mining, an investment of £200 million would

probably double output per man-shift and make possible an output of 250 million long tons annually by 450,000 employees,[28] compared with 182 million tons by 709,000 employees in 1945. It is pretty clear that the coal mines should be permitted to make large capital expenditures. In general, however, capital outlays are likely to yield higher returns in the light manufacturing industries than in the heavy industries, such as steel, construction, and shipbuilding industries. It is not to be expected that planning can indicate the optimum distribution of new capital among industries, but a central planning body deliberately attempting to maximize the yield of new investment in essential industries could doubtlessly effect a greater over-all increase in labor productivity than is likely to occur otherwise. In the absence of such a body with professional advisers, political pressures and popular misconceptions are likely to be the sole determinants of the allocation of resources. For example, the irrational contention that export industries should be given priority over domestic industries is likely to prevail even where production for domestic use may be essential and may offer prospect of greater marginal saving from a given amount of new investment.

VII. *The Prospect of Full Employment*

It remains to consider the assumption that there will be no deficiency in the total demand for goods and services.

From 1939 to the end of 1944, consumers purchased £770 million less clothing and £703 million less durable household goods than they would have purchased had the 1938 level of consumption been maintained. Moreover, there was considerable unemployment in 1938, and the range and attractiveness of consumers' goods were less than they are likely to be in the future. Since the amount of such goods annually available for domestic purchase probably will not reach even the 1938 level until about 1950, and since the increase in personal savings, compared with 1938, will probably be much greater than the increase in commodity prices, the demand for durable consumers' goods is likely to be abnormally large until 1955 or thereabouts.

In 1945 there were about 12 million habitable houses in Great Britain. By 1952, nearly a million additional housing units will be needed to meet the 1945 deficit and the further increase in families by 1952. Since most of the building labor force will be engaged in maintenance

[28] These figures are based on the estimated developmental costs of a new coalshaft recently opened at New Calverton in S E Notts, the modernization programs of 10 companies summarized in Appendix IV of the Reid Report (Cmd. 6610), and the opinion of an American mining engineer with experience in Britain regarding the average cost per ton of annual production of developing new mines. Also, other scattered data on the cost of opening new mines and modernizing old ones tend to confirm the above judgment of what an investment of £200 million might achieve.

and repair work for several years and since part of the new construction achieved in 1946–47 will consist of work in progress, it is unlikely that more than $1\frac{1}{2}$ million houses will be completed before 1952. Thus, the prospective construction of new houses during 1945–51 will provide replacement for less than 5 per cent of existing houses.

Since about 6 million houses in Britain will be over 50 years old in 1952 and since about 2 million others will be 30–50 years old, the replacement need is apparent. After 1952, when the backlog of repairs is eliminated, a building labor force of one million could probably be utilized until 1970 or 1975 replacing pre-1914 houses and commercial buildings and performing normal maintenance work. (Actually, of course, many of the $4\frac{1}{2}$ million houses built between 1919 and 1939 were very poorly constructed and will need replacement more urgently than some which were built before 1919.) A program of this magnitude, involving the elimination of many urban slums, would require large subsidies for which there is sure to be strong popular support.

The outlay for medical, educational and other social services, provided mainly by the government, will be stabilized at a much higher level than that of 1938.

The demand for private producers' goods will be sustained for many years not only by expanding consumer demand but by the backlog of deferred maintenance and by extensive obsolescense. In addition there will be a large unsatisfied demand for public undertakings, such as airports, roads, schools, and clinics. Also, the government may stockpile certain foods and raw materials as protection against temporary shortages, price squeezes, and wartime blockade.

The expansion of educational facilities will increase the number of students over 15 years old, and more generous old-age pensions will also tend to reduce the labor force. Finally, the demand for shorter hours will be more insistent as the standard of living rises.

It is almost certain, therefore, that there will be no deficiency of effective domestic demand for goods and services in 1952, and for several years thereafter. Should economic depression in the United States reduce world demand for British exports, the United Kingdom could temporarily maintain employment in most export industries by allotting a higher fraction of the output to the domestic market.

Thus, for the first time since World War I, there is virtual certainty of uninterrupted full employment in the United Kingdom for a decade hence. Yet, ironically, this situation comes at a time when the fear of unemployment is most general and when there is great demand for tax concessions, subsidies, more generous unemployment insurance, and public works as a means of insuring full employment. To be sure, it is generally recognized that there will be full employment for three or four

years, but there is no general realization that full employment for at least a decade is virtually assured. The unfortunate aspect of this misapprehension is that labor unions which mistakenly fear unemployment a few years hence may not coöperate fully in the introduction of labor-saving machinery. Shorter working hours may be advocated on this account. Also it is likely that many persons may cling to low-paid, but fairly secure, jobs of the "personal servant" type simply because they fear being unemployed a few years hence if they take factory or other industrial jobs. Concern over unemployment may also lead to private spending of less social utility than alternative public expenditures which can be deferred as a reserve against future unemployment.

Even in the longer view there is a good chance of continued full employment in the United Kingdom not only because of the prospect of high propensities both to consume and invest, but also because of the general recognition by a sophisticated electorate that unemployment can be avoided and that no cabinet that permits unemployment should be retained in power. It may be that the maintenance of full employment will require more and more governmental control over prices and wages to prevent monopolistic elements in the economy from restricting output and employment opportunities, and it may be that more industries will have to be nationalized if capitalists do not take advantage of favorable investment opportunities. But the public is prepared for such measures.

If the export industries were subjected to prolonged curtailment on account of unemployment or increased protectionism in the United States, the United Kingdom—in view of its strong bargaining position—could probably form a trading association, excluding the United States, in which each member agreed to increase its imports from other members. Thus the shortage of dollars could be prevented from progressively reducing world trade. The changed composition of imports consequent upon the transference of British purchases from the United States to other countries would result in some disadvantage, but at least large unemployment could be avoided by such a planned maintenance of international trade.

Should the United Kingdom maintain full employment for 15 or 20 years, as it may very well do, its industrial capabilities would expand by 50 per cent or more and its social order would become increasingly stable. Labor productivity, though likely to remain less than in the United States, would continue to exceed that of any other major country. This is the principal reason for optimism. With respect to total economic capabilities, the United Kingdom must inevitably be far outstripped by Russia and United States, whose populations are rapidly increasing.

Selected List of Recent Industry Reports by British Government Departments

Building:

Methods of Building in the United States. (Bossom Report) Issued by the Ministry of Works. January, 1944. SO: 70–439.

Contains some comparative data on costs and labor productivity in Britain and America, but does not contain a detailed factual survey the British building industry.

Post War Building Studies (Nos. 1–23). Issued by the Ministry of Works. SO: 70–441.

These are more in the nature of guides to builders than industrial studies, but they reflect the state of industrial development in a number of fields.

Housing Manual, 1944. Issued by the Ministry of Works, September, 1944. SO: 70–454.

Technical Appendices. November 1944. SO: 70–454–1.

There have been other, mostly short reports on training for the building industry, use of standards in building, placing and management of contacts, etc. Also there have been a number of formidable reports on town planning and land utilization. The much debated Barlow, Uthwatt, and Scott reports have been followed by the *Town and Country Planning Act of 1944*, the *Greater London Plan, 1944*, the *Merseyside Plan, 1944*, and other reports on housing, city planning, and hydroelectric developments.

Coal:

Coal Mining: Report of the Technical and Advisory Committee (Reid Report). March, 1945. Cmd. 6610, 149 pp.

This report, which contains a good factual survey and over 100 specific recommendations for improving mining techniques, was submitted by a committee composed not of outside experts but of managers and owners from within the industry. None the less, the report is highly critical of management in the coal industry. This report is reviewed by A. Beacham in an article, "Efficiency and Organization in the British Coal Industry," in the June-September, 1945, issue of the *Economic Journal*.

Coal Report of United Kingdom Open Cast Coal Mission to the United States. Issued by the Ministry of Fuel and Power. January, 1945. SO: 70–9999.

Coal Mines Mechanization. by G. M. Gullick, mechanization adviser to Ministry of Fuel and Power. September, 1945.

Coal Mining Industry Quarterly Statistical Statements of Costs of Production, Proceeds, and Profits of the Coal Mining Industry for the 3rd Quarter of 1944 and the year 1945. Cmd. 6814.

The report of the American Technical and Economic Mission to the

United Kingdom in June and July, 1944, sponsored by the Combined Production and Resources Board, has never been publicly released.

Probably the best recent non-governmental study of the coal industry is *New Deal in Coal* by Harold Wilson, published by Cole and Co., 1945.

GAS:

The Gas Industry. Report of Committee of Enquiry. December, 1945. Cmd. 6699. 57 pp.

IRON AND STEEL:

Reports of the British Iron and Steel Federation and the Joint Iron Council to the Minister of Supply. May, 1946. Cmd. 6811.

TEXTILES:

Report of Cotton Textile Mission to the United States. Ministry of Production. October, 1944. SO: 70–457.

This report contains a wealth of comparative data which is further analysed by L. Rostas in an article, "Productivity of Labor in the Cotton Industry," in the June-September, 1945, issue of the *Economic Journal.*

Cotton. Working Party report published by Board of Trade. May, 1946. SO: 51–268–2. 278 pp.

Good factual survey and good analysis.

GENERAL:

Distribution of Industry Act. June, 1945. 8 & 9 geo. 6 ch. 36

National Water Policy. April, 1944. Cmd. 6515.

Domestic Fuel Policy. Report by the Fuel and Power Advisory Council. March, 1946. Cmd. 6762.

Industrial Opportunities in the Developmental Areas. (Articles reprinted from the Board of Trade Journal.) Issued by Board of Trade, March, 1946.

The above-listed government documents are available through the British Information Services, 30 Rockefeller Plaza, New York 20. This agency has available for distribution a pamphlet entitled, *Select List of White Papers and Other Important Government Documents,* covering the period September 1939 to September 1945, and also a booklist entitled, *British Civilization and Institutions* (4th ed.), compiled by the British Council. The latter list includes private as well as government publications and covers the inter-war period as well. For a recent and fairly comprehensive listing of studies of British industry, including those in economic and trade journals, the reader may wish to refer to the footnotes on pages 65–124 of Alfred Kahn's *Great Britain in the World Economy* (New York, Columbia Univ., Press, 1946).

MONETARY REFORM IN LIBERATED EUROPE

By Fred H. Klopstock[*]

Since the autumn of 1944 a large number of European countries, with a view to controlling the monetary and financial legacy of war and occupation, have embarked upon monetary reform experiments of great interest to the student of monetary theory and practice. While differing in detail from country to country, these reform programs have generally provided for the withdrawal of most, if not all, of the outstanding notes and for their conversion into new currency. In most cases, only a moderate part of the withdrawn currency has been exchanged, the remainder being blocked in bank accounts from which withdrawals or transfers may be made only up to specified amounts or for specified purposes. Simultaneously, in most countries, the same or similar restrictions have been imposed on all or part of the bank deposits existing at the time of the adoption of these measures. Subsequently the blocked balances resulting from these operations have been partly released and additional portions have been or are about to be absorbed by the issue of government securities and by special capital levies and war profit taxes.

The broad objectives of most of these post-war monetary reform schemes have been to exert a restraining influence on the public's expenditures, to force people to seek employment by making them dependent on current income instead of past savings, and to deprive the public of funds with which to purchase in black markets. In some countries, the conversion of currency has been chiefly an instrument for the detection of concealed wealth held in monetary form and of income tax evasion during the war period. An incidental purpose of the reform measures has been to ascertain and cancel the amount of notes held by the enemy and lost or destroyed in the course of the war. Unification of the currency has been another, though never the sole, objective in countries where a multitude of currencies have been introduced during the war. This paper will attempt to analyze the results, techniques and lessons of these monetary reform measures in liberated Europe against the background of the monetary and financial situation in the countries concerned.[1]

I. *Precedents for Contemporary Reform Measures*

While monetary reform may be "as old as money itself,"[2] an examina-

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[1] For a bird's-eye view of monetary reform in Europe, see my article, "Monetary Reconstruction in Continental Europe," *Commercial and Financial Chronicle*, April 18, 1946.

[2] Paul Einzig, *Monetary Reform in Theory and Practice* (London, 1936), p. 4.

tion of its history yields few, if any, precedents for the major schemes under review in this paper.[3] It is true, however, that certain currency decrees issued after the First World War exhibit some similarity to present-day monetary experiments in that they provided for a conversion of some part of the currency in circulation into forced loans.[4] Czechoslovakia's currency reform decree of February 25, 1919, for example, which authorized the stamping of all notes of the Austro-Hungarian Bank and the conversion of 50 per cent of such notes into non-negotiable government bonds,[5] is sometimes cited as an example for what has been attempted in Europe in 1944–45. But though this decree and the capital levy which accompanied it was, in the words of Keynes, "the only drastic courageous and successful measure of finance carried through anywhere in Europe at that epoch,"[6] in scope and comprehensiveness it was substantially less ambitious than present-day monetary experiments. Greece's currency reform decree of April 7, 1922, under which all notes in circulation were divided into two, with one part to remain in circulation and the other to serve as a bond bearing an interest rate of $6\frac{1}{2}$ per cent,[7] is another measure worth mentioning in this context since it apparently served as a model for the reform experiment carried out in Finland at the turn of last year.

The difference between contemporary monetary reform programs and those of the previous post-war era can be attributed to the much milder nature of present-day monetary maladies. Most monetary reform programs under discussion were carried out before inflation had achieved major proportions. To a considerable extent, they were of a prophylactic nature in that their primary aim was to prevent price increases from gaining momentum rather than to bring an already existing hyperinflation to a halt. In most cases, monetary stabilization schemes after the First World War were put into operation only following a protracted period of currency disturbances and not until inflation had run its course and brought about a depreciation of the established currency units to a small, and in several cases infinitesimal, fraction of their pre-war values.

[3] For a history of currency reform in Europe before World War I, see R. G. Hawtrey, *Currency and Credit* (London, 1919).

[4] For a history of currency stabilization in Europe after the last war, see *e.g.*, John Parke Young, *European Currency and Finance*, U. S. Senate Gold and Silver Commission, Series 9, Vol. I and II (Washington, 1925); Elemer Hantos, *Das Geldproblem in Mitteleuropa* (Jena, 1925); Michael A. Heilperin, *Le Problème Monétaire d'après-guerre* (Paris, 1931); D. T. Jack, *The Restoration of European Currencies* (London, 1927).

[5] Alois Rasin, *Financial Policy of Czechoslovakia During the First Year of its History* (London, 1923), p. 25.

[6] John Maynard Keynes, *Monetary Reform* (New York, 1924), p. 159.

[7] E. Pharmakides, "La Situation Monétaire en Grèce," *Revue Economique Internationale* (Brussels, December, 1922).

In a few countries it then became necessary to establish an entirely new currency system and to introduce a new unit of account.

In sharp contrast to the procedure adopted in 1944–45 when the liberated countries of Europe converted the money introduced by Germany and her satellites into new national currencies in a manner which reduced the circulation drastically, unification after the last war was in no case, except in Czechoslovakia, accomplished without further monetary expansion on a large scale.[8] In Poland, the currency unification of 1920 was accompanied by a sharp expansion of the circulation of Polish marks, and the establishment of a stable currency involved the exchange of marks into newly issued gold zlotys at the rate of 1.8 million to 1.[9] In Hungary, the Note Institute, set up in 1921, converted all old banknotes and other paper currencies into an equal amount of state notes. Stabilization was effected only after the currency circulation had reached 3,000 billion crowns in the middle of 1924.[10] InBelgium where in 1944 monetary reform achieved a drastic contraction of the money supply, the conversion of German marks into francs in 1918–19 was carried out without any major effort to withdraw currency from circulation and actually involved the recognition of the inflation of the occupation period.[11]

II. *Monetary Developments in Europe During World War II*

The genesis, methods and characteristics of present-day European monetary reform programs can only be understood in relation to monetary developments on the continent during the war. As elsewhere, the expansion of currency and deposits in German-controlled Europe was on a huge scale. But, unlike in most belligerent countries, the factors responsible for this expansion were largely of external origin. Central bank financing of German exactions rather than of domestic war expenditures have been primarily responsible for the growth of the money supply in occupied Europe. While in the United States and Canada real civilian consumption increased during the war,[12] it declined drastically throughout occupied Europe—not only because of German acquisitions of civilian goods, but also because of physical destruction and the disruptive impact of the war on the civilian economy. The gap between the income stream and the flow of goods and services available for con-

[8] Jack, *op. cit.*, p. 12.

[9] Young, *op. cit.*, Vol. II, p. 177.

[10] A. Popovics, "Hungarian Currency and Banking" in *European Currency and Finance*, Vol. I, p. 233.

[11] Henry L. Shepherd, *The Monetary Experience of Belgium 1914–1936* (Princeton, 1936), p. 18.

[12] Combined Production and Resources Board, *The Impact of the War on Civilian Consumption* (Washington, September 1945), p. 21.

sumption was substantially larger in the area under discussion than in this country and the inflationary threat growing out of the wartime credit expansion was, therefore, correspondingly greater.

The financial techniques of German exploitation are familiar and require little elaboration.[13] German occupation levies and purchasing of goods and services via the clearing mechanism or by payment in blocked reichsmarks have been at the root of all monetary developments of occupied Europe. The fact that in France, Belgium, Holland and Denmark as much as 52 per cent of total official outlay during the three and a half war years up to the end of 1943 was for German account, and that in 1943 the ratio had risen to two-thirds,[14] illustrates the degree of German exploitation of the economic resources of the continent. The administrations of these and other countries where German exactions were of similar, if not larger, proportions were unable to raise the funds demanded by the nazi Reich through taxation or loans from the public, and most of Germany's acquisitions of goods and services, whether by German importers or by occupation armies, were, therefore, financed by credit expansion, chiefly on the part of central banks.

As these newly created funds were disbursed, inflationary pressures upon prices of goods in scarce supply increased and consumer incomes expanded. Nevertheless, owing to the exhaustion of inventories and because of rationing and other quantitative controls which in most of German-occupied Europe were applied with considerable efficacy, a large part of these incomes remained unspendable and were diverted into idle balances. Moreover, a not inconsiderable proportion of the funds made available to Germany was spent for existing capital equipment or served to finance other items which passed through the capital account of the balance of payments, such as remittances of savings by foreign workers in Germany to their homelands. To the extent that these funds were not expended by their recipients, the credit expansion did not create even a primary expansion of income.

While all of the countries occupied or controlled by Germany have experienced substantial increases in their money supply, the rate of expansion has been most rapid in the Balkans. In Yugoslavia, for instance, where, as in other Balkan countries, price inflation had already during the war assumed large proportions, the note circulation rose from 15.3 billion dinars at the end of March 1941 to the equivalent of more than 250 billion dinars in April, 1945.[15] In Belgium currency and

[13] See, *inter alia*, Thomas Reveille, *The Spoil of Europe* (New York, 1941); Frank Munk, *The Legacy of Nazism* (New York, 1943); League of Nations, *World Economic Survey 1942–1944* (Geneva, 1945).

[14] Bank for International Settlements, *Fourteenth Annual Report* (Basle, 1944), p. 214.

[15] *Economist*, January 19, 1946.

demand deposits of commercial banks rose from 39.5 billion francs in December, 1939, to 143.9 billions at the end of September, 1944.[16] In the Netherlands the money supply expanded from about 1.7 billion guilders at the end of 1939 to 7.1 billions in April, 1945.[17] In Norway note circulation and demand deposits in commercial banks increased from 808 million kroner in March, 1940, to almost 4.7 billion kroner on May 7, 1945.[18] The corresponding figures for Denmark are 1.3 billion and 4.4 billion kroner. In all these countries, except in Yugoslavia, the increase in the money supply outstripped the rise in prices by a large margin. By and large, price control in that area was remarkably successful.

Throughout German-controlled Europe, as practically everywhere else, the expansion in the aggregate money supply was accompanied by a relatively greater growth in currency holdings than in bank deposits, while demand deposits tended to rise faster than time and savings deposits.[19] In part, the preference for currency relative to deposits can be traced to the desire of the public to keep on hand, under the special circumstances of war and occupation, larger currency balances relative to deposits in order to meet unforeseen contingencies. Efforts to reduce taxation by concealing income may also have been factors in some cases. But the major reason was probably the fact that currency was the sole acceptable means of payments in the black market.

Upon eviction of the German armies, the liberated countries were subjected to new financial demands at a time when their resistance to further monetary expansion was at a low point. The military expenditures of the Allies for local supplies and services, and particularly the issue of local or military currency for the pay of their armies, were a major factor in the growth of circulation during the final phases of the war in countries such as Italy and Belgium. The introduction of military notes, moreover, further added to the currency disorder in countries which had been dismembered during the war and where numerous new currencies, as well as those of Germany and some of her satellites, had been put into circulation.

The general liquidity engendered by the credit expansion of the occupation and liberation period constituted an important obstacle to plans for economic reconstruction and acted as a drag on economic recovery. People holding substantial amounts of cash preferred to live in idleness or to engage in black-market operations rather than to seek

[16] Bank for International Settlements, *op. cit.*, p. 225.

[17] League of Nations, *Monthly Bulletin of Statistics*, February, 1946.

[18] Kaare Petersen, "The Monetary Reconstruction Program in Norway," *Norwegian American Commerce*, February, 1946.

[19] Comparing merely the increase in currency and in demand deposits of commercial banks, Norway and Denmark are the only countries under German occupation where the latter have risen faster than the former.

productive employment which would yield earnings sufficient to buy only in official, but not in black markets. In many liberated countries the spread of black markets not only discouraged hard work, but also promoted a speculative atmosphere and gave rise to undesirable shifts in the distribution of income in favor of speculators, war profiteers and collaborationists. Tax evasion—in some countries considered a patriotic duty during the period of occupation—was widespread. Moreover, with business in a position to fall back on its liquid resources, the traditional instruments of monetary control over the aggregate demand of the public had lost their potency.

At the end of the war, therefore, the basic problem of monetary statesmanship in liberated Europe was how to regain a measure of control over the money supply; how to mop up idle money before it could become activated and exert income-expansionary effects while the flow of civilian goods was still a trickle. An answer had also to be found to the question of how to reduce disposable income where such hoards had already begun to get into motion and how to bring into the open and subject to taxation the monetary wealth concealed by profiteers and collaborationists. Currency unification in countries where several currencies were circulating posed another group of perplexing problems. These issues arose at a time when, owing to shortages of raw materials, transportation, electrical power, etc., production throughout liberated Europe was at a low level, so that even small amounts of dissaving tended to generate inflationary pressures of great strength.

III. *Monetary Strategy in Liberated Europe*

The methods employed by European governments in their attempts to deal with the monetary aftermath of war and occupation may be most conveniently divided into two major, though interrelated groups: (1) The withdrawal of excess currency and the blocking of bank deposits with a view toward bringing the huge liquid funds under direct control of the monetary authorities; and (2) the sterilization of blocked as well as unblocked funds by means of fiscal instruments, such as the issue of nonmarketable securities, capital levies, and war profit taxes. While generally fiscal measures of this type have been executed or are about to be executed within the larger framework of blocking schemes, there are a few cases where fiscal measures of a primarily monetary motive were not preceded by any blocking whatever.

Belgium's monetary reform decree of October 6, 1944, issued shortly after the arrival of the government-in-exile in Brussels, was the first in the long series of similar measures providing for the blocking of currency holdings and bank deposits. Poland followed suit early in 1945 with several decrees under which German, German-sponsored and Russian

currencies were exchanged into a new national currency and excess currency holdings blocked. Similar operations were carried through in Yugoslavia in April, when limited amounts of a new currency, called the dinar of the Federative and Democratic Yugoslavia, were issued to holders of currencies put into circulation during the occupation period. All currency holdings in excess of the exchanged portion, as well as bank deposits, were blocked. Denmark in July, 1945, blocked part of the public's currency holdings. On September 8, Norway issued a decree under which a part of the money supply was blocked. In the Netherlands, the blocking program was carried out in two phases. In June, 100 guilder notes ceased to be legal tender, but could be deposited in bank accounts where they were blocked, except for payments of taxes. In September, all remaining currency holdings were withdrawn and blocked except small amounts of newly issued notes. All bank deposits were frozen as of September 26. Czechoslovakia's currency conversion decree of October 19, 1945, established a new crown currency and blocked a sizeable part of the country's money supply. Austria's currency reform law of November 30 provided for the exchange of all currency in denominations of over 5 reichsmarks and 5 military shilling notes into a new national currency, the Austrian shilling. Currency holdings in excess of 150 military shillings or reichsmarks, as well as most of the existing bank balances, were blocked. An elaborate currency conversion program was carried out in France in June, 1945, involving, however, no blocking at all.

Capital levies, increment taxes and forced loans for the purpose of mopping up part of the increase in the money supply, have been adopted or are, according to present indications, about to be adopted in a large number of countries. A capital levy and war profits taxes were imposed in Belgium in October, 1945, and at the same time blocked balances were converted into a forced loan. Finland, under a decree which became effective on January 1, 1946, issued a forced loan to holders of large denomination notes. The Norwegian government has presented to the Storting a bill providing for a highly progressive tax on war profits. A progressive capital levy and war gains tax, applicable to all increases in wealth between January 1, 1939, and November 15, 1945, is about to be adopted in Czechoslovakia. In Denmark, the Parliament has under consideration a bill providing for a progressive tax on war profits and a forced stabilization loan to be subscribed by persons of large means. The Netherlands government has submitted to the Dutch parliament bills calling for a capital levy and the taxation of profits made during the war. Capital levies falling solely on monetary wealth have been enacted in Yugoslavia and Hungary.

A. *Blocking as an Instrument of Monetary Policy*

The wide popularity of the blocking device arises from its great potency as an instrument for controlling the volume of the public's expenditures out of balances existing at the time of the adoption of the freezing decrees. By preventing the sudden release of idle balances blocking performs a valuable function wherever potential dishoarding constitutes a major threat to monetary stability. The immobilization of idle balances is, however, only one of the major objectives of the blocking feature of monetary reform programs. Of at least equal importance is to deactivate those funds already moving in black markets where they tend to produce income-expansionary effects; the extent to which this purpose is achieved is the criterion by which blocking as an instrument of monetary policy is largely judged in actual practice.

From attempts to block the active component of the money supply, however, arise some of the most baffling problems with which monetary reform programs have been confronted. Such blocking involves the imposition of restrictions over the disposal of funds needed for legitimate transaction purposes. Unless used with great caution, the blocking of active money may deprive commerce of its working capital and individuals of funds for the purchase of those essentials which cannot be acquired out of current earnings. If the blocking is overly strict, therefore, it may generate deflationary disturbances of undesirable dimensions; if it is too loose, the counter-inflationary force of the reform program will be impaired. The success of blocking measures largely depends on the ability of their authors and administrators to strike a proper balance between these two extremes. The determination, therefore, of how much of the public's currency holdings to convert into new notes and what part of bank deposits to exempt from blocking or to unfreeze, as well as the selection of purposes for which blocked funds may be released, constitute the most crucial policy decision in the formulation of a blocking program.

A drastic contraction of the currency supply has been the major line of attack via monetary channels on the problem of black market control. The conversion of excessive currency holdings into bank deposits, the use of which can be easily traced, deprives black marketeers as well as their customers of the cash necessary for illegal trading. The first steps in the execution of monetary reform laws are, therefore, the invalidation of most, if not all, of the banknotes in circulation and the issue of limited amounts of new currency in exchange for old currency. In almost all countries, the currency conversion program has given rise to numerous and perplexing issues of a technical nature which have not always been successfully resolved. In several cases, the withdrawal of old notes was

accompanied by a short period of extreme monetary stringency only partly alleviated by small grants of new currency issued at the outset of the conversion program. As a result and in some cases in anticipation of currency conversion programs, currency holdings for a brief period have dropped precipitously. In Belgium, for instance, they dropped from more than 100 billion francs at the end of August, 1944, to 28.5 billions at the end of October, and in Norway from more than 3 billion kroner at the end of April, 1945, to 1.5 billions shortly prior to the conversion, which began on September 8, and to slightly over 1 billion kroner at the end of September.

Most monetary reform decrees have left small-denomination notes and coins in circulation—either because new notes of small sizes had not yet been printed or in order to cushion the impact of the withdrawal on the economy—but the result has been, in a few instances at least, the hoarding of small-denomination notes and coins and the emergence of a dual price system, one for payment in small-denomination notes and the other in notes about to be withdrawn.[20]

Except in Greece, where in November, 1944, in a futile effort to end inflation and in order to provide a usable unit of account, all notes were exchanged at the rate of 50 billion old drachmas for 1 new drachma, all currency conversions were carried out at par. Some countries, however, where monetary reform was accompanied by the unification of the numerous currencies introduced during the occupation period, established discriminatory conversion rates and conversion limits. The outstanding illustration of such discrimination is provided by the series of currency reform decrees issued in Poland early in 1945, under which the Russian ruble was exchanged in unlimited amounts into new zlotys, but the zloty issued in the German-administered Government General of Poland only up to 500 zlotys.[21] Moreover, Polish holders of German reichsmarks could only obtain 250 zlotys at the rate of 2 reichsmarks to 1 zloty,[22] compared with the 1:2 rate used by the nazi occupation forces.[23] Similarly, in Yugoslavia the conversion rates established at the time of the issue of new dinar currency in April, 1945, discriminated against some of the currencies issued by the German satellites.

Following the currency conversion, the exemptions and unfreezing provisions of monetary reform laws and of their amendments became

[20] This occurred, for instance, in Austria (see *New York Times*, December 5, 1945). In Denmark notes not affected by the conversion were accepted at a 50 per cent premium (*Neue Zürcher Zeitung*, July 27, 1945).

[21] *Basler Nachrichten* (March 22, 1945); small industrial and commercial enterprises were permitted to exchange up to 2,000 zlotys. See also *The Banker*, London, June, 1945.

[22] *Financial Times*, London, March 19, 1945.

[23] "Currency Reform in Eastern Europe," *Monthly Review of Credit and Business Conditions*, Federal Reserve Bank of New York, May, 1946.

applicable. In scope and detail, most reform laws, although enacted under analogous conditions and pursuing essentially the same objectives, exhibit little similarity. In many important respects the monetary authorities of each country have actually followed widely divergent precepts and considerations regarding blocking exemptions and the timing and purposes of releases of blocked funds. Most decrees, however, draw a sharp distinction between deposits of individuals and business, permitting the release of funds needed for wage payments and certain other business expenditures which cannot be met from the proceeds of current sales. In Czechoslovakia, for instance, the currency reform decree of October 19, 1945, authorizes employers to withdraw from their blocked bank deposits funds up to the amount of their payrolls for one month. Regulations of a similar nature have been issued in Belgium, in the Netherlands[24] and in Austria.[25] In addition to funds for wage payments, currency reform decrees, or their amendments, sometimes unfreeze funds to be expended for working capital purposes and set up agencies which may unblock funds upon application.

As far as individuals are concerned, those currency reform laws which authorize the release of relatively small amounts usually specify a relatively large number of purposes, mostly of an emergency nature, for which funds may be withdrawn. This was, for instance, done in the Netherlands,[26] and in Austria where persons were permitted to use up their blocked balances in monthly installments if they were unable to seek employment and possessed no other means of support. Such releases reflect the concerted, though not always successful, efforts of the monetary authorities to provide a flexible instrument of control which can be adapted to the special circumstances of the individual owners of bank deposits.

A few currency reform measures, while imposing severe restrictions on cash withdrawals from bank accounts, permit large parts of the blocked balances to be transferred by check or through the giro (bank transfer) system. For instance, the Austrian Currency act of November 30, 1945, which in many respects is one of the most rigid reform decrees on record, authorized transfers from account to account through payment order up to 40 per cent of the balance of the owner as of November 30. In Czechoslovakia, the currency reform law permits the transfer of certain funds from one blocked account to another. Similar arrangements were made during the early stages of the Dutch currency reform. The reason for the comparatively liberal treatment of intra-account payments is the same

[24] "Currency Reform in the Netherlands," *Monthly Review of Credit and Business Conditions*, Federal Reserve Bank of New York, January, 1946.

[25] *Staatsgesetzblatt für die Republik Österreich*, December 1, 1945.

[26] "The Netherlands During German Occupation," *The Annals*, May, 1946, p. 37.

as given earlier in reference to the imposition in many currency reform laws of stringent limitations on the issue of new notes, namely, the desire of monetary authorities to channel payments through the banking system so as to be in a position to examine them for their legitimacy.

Under some decrees, the time period in which the original deposit originated is a criterion of major importance for the availability of bank balances. In certain areas of Austria, this is actually the decisive consideration. Apparently in order to reward people who followed the exhortations of the Austrian government to deposit currency hoards and, in order to discriminate against deposits which were made while Austria was part of nazi Germany, comparatively substantial cash withdrawals were permitted from funds banked following the liberation of Austria, but before the announcement of the decree.[27] In Belgium, 10 per cent of the balance as of October 6, 1944, the day on which the Belgian currency reform was launched, or the entire balance standing to the credit of a bank account on May 9, 1940, the day prior to the German invasion of Belgium, whichever was greater, was exempted from blocking.[28]

With the threat of runaway prices removed and as supplies of essentials became more ample and black markets narrowed, the monetary authorities of some countries permitted the unblocking of funds in addition to those released under the rules enumerated above. Norway, for instance, scrapped some of the most essential parts of her blocking program only three months after their adoption for the reason, according to the Norwegian Department of Finance, that under the liberal interpretation of the blocking regulations, the public could get whatever funds it required anyhow.[29] Belgium too has permitted the release of a considerable amount of blocked funds. But most of the liberated nations have relaxed the reins of their blocking controls but little. However, once the liquid funds were brought under control, governments have shown increasing interest in removing these funds permanently from the hands of the public. With the emergence of this process, monetary reform entered upon a new stage.

B. *Fiscal Tools in Monetary Reform Programs*

Instruments of fiscal policy, such as capital and increment levies, and forced loans, have played a vital rôle and, in most cases, have been an

[27] This feature of the Austrian currency reform law applies only to those areas of Austria which early in July, 1945, were under Russian occupation.

[28] "Belgian and French Monetary Policies," *Monthly Review of Credit and Business Conditions*, Federal Reserve Bank of New York, October, 1945.

[29] Significantly, the Department of Finance stated at the time that the main purpose of the blocking had been to register all accounts and that no useful purpose would be served by keeping the accounts blocked longer than absolutely necessary, Kaare Petersen, *op. cit.*

integral part of monetary reform program in liberated Europe. Blocking, essentially an emergency device, permitted monetary authorities to immobilize liquid assets quickly, but left the eventual disposition of the blocked funds unresolved. Capital and increment levies, as well as the issue of non-negotiable bonds, have been instrumental in absorbing these funds.

The significance of fiscal measures in monetary reform programs arises from their effects on the flow of expenditures out of current income as distinguished from spending out of existing balances which can be controlled by blocking. Recent discussions on consumption economics have focused attention on the incentive to a high propensity to consume which may result from the huge growth of liquid assets holdings in the United States.[30] Application of these observations to the impact of the fiscal parts of monetary reform programs in Europe suggests that the absorption of blocked balances may be conducive to a somewhat lower propensity to consume than would otherwise be the case, and thus tend to retard inflationary pressures so far as they survive or are generated subsequent to the blocking. Needless to say, the more reliance is placed on taxation than on forced loans, the greater the effect in this respect, unless the loans are not only non-negotiable, but carry distant maturities, *i.e.*, are in almost every respect interest-bearing tax receipts. Mere blocking is unlikely to produce any pronounced effects on the income-expenditure pattern since owners of frozen funds are inclined to hope for their eventual release and to consider them contingently available.

The effects of levies, increment taxes and forced loans, designed to absorb blocked balances, are also determined by what the government does with the proceeds. If the government uses them for a reduction of debt held by the banking system, *i.e.*, retires from the monetary system funds which could not be spent by their former owners anyhow, the aggregate volume of expenditures is obviously not affected.[31] Spending by the government of the proceeds on goods and services is, of course, highly expansionary—no less than the creation of new funds, which, however, in actual practice is usually the sole alternative.

Perhaps the best illustration of a contraction of the money supply through tax-loan operations is afforded by the actions of Belgium's monetary authorities in the later stages of their reform program. At the outset of its execution, all blocked balances were divided into a "tem-

[30] See, for instance, S. Morris Livingston, "Wartime Savings and Postwar Markets," *Survey of Current Business*, September, 1943; James J. O'Leary, "Consumption as a Factor in Postwar Employment," *Am. Econ. Rev.*, Papers and Proceedings, May 1945, p. 38; also Gardiner C. Means in *American Economic Review*, Papers and Proceedings, May 1946, pp. 34–35.

[31] Some minor effects arising from changes in the reserve position of commercial banks and from a reduction or shift of interest payments from the banking system to the public may be disregarded in this context.

porarily unavailable" portion of 40 per cent and a "permanently blocked" portion of 60 per cent. In October, 1945, the latter part of the bank deposits were transferred to an account in the Belgian National Bank in favor of the Belgian treasury which plans to employ these funds for the retirement of its debt to the bank.[32] At the same time, the treasury handed to the owners of these balances government bonds of restricted negotiability which may be employed for the discharge of tax liabilities arising from a series of laws enacted in October, 1945.[33] If one abstracts from its timing and operational details, the Belgium monetary reform program involves in effect a contraction of the money supply through a shift of government debt held by the banking system to public ownership and an extinction of part of this debt through capital levies and extraordinary profit taxes.

A contraction of the money supply along the Belgian lines is planned by the monetary and fiscal authorities of Czechoslovakia, Denmark and the Netherlands. Meanwhile, blocked balances in the latter country have been absorbed by induced rather than forced loans. By closing practically all other outlets for blocked funds, their owners are being induced to purchase 50-year bonds carrying an interest rate of 3 per cent which will become negotiable three years after issue. Blocked balances in the Netherlands have also been released for the purchase of limited amounts of savings certificates.

In several countries blocked balances, as they are absorbed through government borrowing and taxation, have been or are about to be used for ordinary budgetary expenditures, despite earlier plans to employ these funds for redemption of various claims held by central banks. In Norway, for instance, it was the original intention to use the proceeds of a proposed levy for the repayment of advances by the Norges Bank to Germany,[34] but more recent plans call for allocation of these funds to the purchase of capital equipment and other supplies. Similarly, in Finland the proceeds of a forced loan placed in early 1946, which was originally destined to serve for the retirement of government bonds held by Finlands Bank, are apparently employed to cover the current budget deficit.

Finland's forced loan, which, unlike those of other countries, was not accompanied or preceded by any blocking, deserves some further attention because of the unusual technique employed in its placement.

[32] Banque Nationale de Belgique, *Bulletin d'Information et de Documentation*, October, 1945.

[33] These laws include a capital levy of 5 per cent on all property held in October, 1944, and special taxes on profits derived from trading with the enemy and on excessive income and profits made during the war whether or not resulting from trading with the enemy. See Mitchell B. Carroll, "Outline of War Profit Taxes and Capital Levies in Liberated European Countries," *Tax Law Review*, April–May, 1946.

[34] *Neue Zürcher Zeitung*, September 29, 1945.

Under a decree issued by the government at the end of December, 1945, all notes in denominations of over 100 finmark lost one-half of their legal tender quality.[35] These notes had to be cut into two, the left half serving as legal tender at one-half the value of the original note until exchanged into new notes. The right half was converted into a non-negotiable 2 per cent government bond to be redeemed by 1949. The decree did not affect bank balances at all. Note circulation figures indicate that a measure of this type was anticipated so that hoarders of large-denomination notes were able to escape the loan through placing them in bank accounts. Moreover, the measure has inflicted hardship on holders of a few large-denomination notes, particularly in sparsely-settled regions without adequate banking facilities, who were deprived of one-half of their small currency supply. These and other aspects of the conversion have evoked considerable criticism in Finland and are about to be corrected by supplementary measures.

There remain to be briefly reviewed two drastic measures of more than ordinary interest to the analyst of monetary reform. The first is Yugoslavia's capital levy imposed in the spring of 1945 following the blocking of bank deposits and the withdrawal of currencies introduced during the occupation period.[36] This highly progressive levy was laid solely on monetary wealth, disregarding all other forms of property. Different tax schedules applied to various classes of holders, giving the measure a socio-economic orientation of great significance. Coöperatives and certain public organizations were entirely exempted and "productive enterprises" and farmers favored by relatively low rates.

A different kind of capital levy on monetary wealth was imposed late in December, 1945, by the Hungarian government in a desperate but futile effort to arrest the process of hyper-inflation, then in its early stages. Under a decree issued in December, 1945, all notes in denominations of 1,000 pengos and over had to have adhesive stamps affixed to retain their legal tender quality at face value. Since the stamps were sold by the government at three times the face value of the notes, the measure constituted a straight 75 per cent tax on holders of cash—a burden which made little difference in a country where price increases constantly reduced the real value of currency holdings. The decree failed entirely to retard inflation and did not give the government even a breathing spell during which to interrupt the work of the printing presses.[37] No simultaneous attack was made on the basic causes of

[35] Bank of Finland, *Monthly Review*, January–March, 1946.

[36] "Currency Reform in Eastern Europe," *op. cit.*

[37] For a full description of the execution of the scheme, see *Svenska Dagbladet*, Stockholm, February 13, 1946; also Klopstock, "Monetary Reconstruction in Continental Europe," *op. cit.*

inflation in Hungary nor any attention paid to psychological intangibles which in the past have helped to bring hyper-inflation to an end. Owing to leaks concerning its impending issue, the measure actually induced a more than threefold price increase by sellers of goods who attempted to protect themselves against loss on their currency receipts. Prices since then have risen by leaps and bounds and monetary stabilization must await the execution of a comprehensive economic reform program which is now being prepared by the Hungarian government.[38]

IV. *Tentative Appraisal and Conclusion*

Monetary policy in an over-liquid world, immune to the established instruments of monetary control, is less capable than ever to perform its traditional functions effectively. But monetary authorities in many parts of the world are striking out boldly for new ways and means of regaining some measure of control over money and credit conditions. While in this country the most widely discussed proposals for innovations in the central banking mechanism, such as the Certificate Reserve Plan, have been primarily concerned with preventing further monetization of the public debt, most governments of liberated Europe, confronted with inflationary threats that called for immediate action, have gone straight to the roots of the problem and have adopted elaborate monetary measures involving direct controls over the utilization of the existing money stock.[39]

An attempt to evaluate the effectiveness of these schemes at this early stage of their evolution is handicapped by the absence or unavailability of authoritative and detailed studies prepared in the countries concerned. Generalizations on the monetary and financial repercussions of these measures are dangerous in view of their great divergence in latitude and character. Little can be said on the fiscal parts of the programs because in several countries neither their scope nor the allocation of the proceeds of loans and levies has as yet been determined. While it is thus too early to pass final judgment on the performance of monetary reform in liberated Europe, certain tentative conclusions may be drawn at this point from the monetary experience of a few of the countries under review.

The contractionist and preventative effects of monetary reform pro-

[38] This program was put into operation on August 1, but too late to be considered in this paper.

[39] Mention should be made at this point of recommendations for applying similar measures in the United States. Irving Fisher in a letter to the *New York Times* of April 30, 1946, seriously suggested that a certain percentage of the demand deposits in the member banks of the Federal Reserve System be frozen until further notice and the blocked portion be converted into interest-bearing and marketable securities. A proposal for a currency exchange to sterilize black market money was made in the *Magazine of Wall Street*, of May 25, 1946.

grams appear to have been considerable, at least in their early phases. Available evidence suggests that blocking, particularly in those countries where it was applied with great severity as in Belgium, the Netherlands and in Eastern Europe, has been instrumental in reducing inflationary pressures appreciably. This is indicated by the severe decline in black market trading immediately following the adoption of the reform decrees.[40] An outstanding exception is Belgium, where black market prices after a brief interlude rose again, but this phenomenon was largely due to the deterioration of the supply situation resulting from the delay in the eviction of the German army. The temporary resurgence of black markets during the early stages of the Belgian monetary reform program does not mean that it failed in its purpose. There is little doubt that the Belgian scheme, which was the forerunner of all other monetary reform measures in liberated Europe and probably the inspiration to some, was an anti-inflationary tool of great potency and has substantially contributed to the relatively rapid pace of Belgian reconstruction during 1945. Monetary reform programs have also exerted a wholesome influence by dispelling the "holiday" atmosphere which was noticeable in many European countries after liberation, as people were living on their money hoards. Moreover, by increasing the dependence of business on bank credit, blocking has served to enlarge the scope of monetary and credit policy.

Currency conversion, as well as the registration of bank deposits and other assets which in several cases has been part of the reform programs, have been useful in the preparation of capital levies and have forced collaborationists and blackmarketeers to reveal their ill-gotten gains. But expectations on the part of treasuries of large profits because of nonsurrender of notes held by tax evaders or the enemy, have proved illusory in several countries.[41]

The fact should not be lost sight of, however, that these schemes have, at times, given rise to considerable economic disturbances. The authors of the blocking programs have not always judged accurately the transaction requirements of the public whose money holdings are frequently maldistributed and whose money needs may vary widely.[42] Even if mitigated by numerous exemptions from the freezing controls and subsequent releases, the indiscriminate blocking of large portions of the

[40] This was particularly apparent in the Netherlands. See *Quarterly Review*, Amsterdamsche Bank, January, 1946.

[41] This applies particularly to Norway, Finland and Denmark. See *Neue Zürcher Zeitung*, April 1, 1946.

[42] For a severe, though not particularly judicious, criticism of the deflationary effects of the Belgian scheme, see Fernand Baudhuin, "Après Six Mois de Libération," *L'Echo de la Bourse*, March 20 and 21, 1945. As to financial disturbances in Austria due to the monetary reform, see *New York Times*, February 1, 1946.

money supply remains basically a very crude and inflexible device, the use of which can be supported only under the extraordinary conditions of the early post-war period.

There is also considerable evidence that the contractionist and preventative forces of monetary reform programs wore off rather rapidly as the expansionary influences of reconstruction finance became ascendant. Throughout liberated Europe the depletion, destruction and dismantlement of capital equipment during the occupation period has forced governments and private business to program huge capital outlays for reconstruction. These programs are being carried out while specific shortages of various sorts prevent full utilization of economic resources. With production in most countries of liberated Europe rising very slowly, large investment expenditures tend to push aggregate demand to a level in excess of output plus net imports so that new inflationary pressures are generated. In some countries, moreover, the restrictive effects of the reform decrees were impaired by large currency issues to cover the needs of the Allied armies. This was the case in Belgium in the winter of 1944–45 and in Austria in 1946.

Comprehensive statistics on the aggregate money supply and its blocked portion are unfortunately not available for most countries under discussion, but it is possible to present figures for notes in circulation which reveal the rapidity of the resumption of currency expansion despite the restrictions on withdrawals from bank deposits. While the sharp rise in currency circulation partly reflects normal cash needs at the prevailing level of prices and wages, there is evidence that the desire for holding relatively large precautionary and speculative cash balances, a habit carried over from the wartime period, was a factor in the currency expansion.

NOTE CIRCULATION

(Month-end figures in billions of currency units)

	Netherlands (guilders)	Belgium (francs)	Norway (crowns)	Denmark (crowns)	Czechoslovakia (crowns)
December, 1939	1.1	28.0	.6	.6	7.7
April, 1945 (Pre-liberation level)	5.5	100.8[a]	3.0	1.7	51.2
Level after Withdrawal	1.3 (X .45)	28.5 (X .44)	1.0 (IX .45)	.9 (VII .45)	23.0 (XI .45)
May, 1946	2.2	72.5	1.6	1.5	32.0

[a] August, 1944.

The appearance of considerable amounts of currency hoards as well as the rapid growth of free balances in the wake of monetary reform

measures illustrate the fact that they can do very little to allay the expansionary forces of reconstruction finance. Their adoption has, in some cases, persuaded the public that the government is determined to pursue a counter-inflationary policy and has thus discouraged spending out of current earnings to the extent that it was motivated by the anticipation of price increases.[43] Certain restraints on spending have probably resulted from the reduction of liquid asset holdings. Except in these two respects, the monetary measures taken in liberated Europe have been of little relevance to the volume of expenditures out of current income. Once imposed to deal with the inflationary pressures growing out of the occupation period, blocking cannot be repeated to cope with similar pressures arising during the reconstruction period. Unless assured and convinced that current earnings remain freely available, the public will tend to keep shy of bank deposits or to increase spending in order to evade the effects of a new blocking program. Such tactics cannot be countered by a renewed withdrawal of currency holdings, for a repetition of the currency conversion is hardly feasible considering the administrative problems and the monetary disturbances associated with its execution. For essentially similar reasons, it is ordinarily not possible, though monetary conditions may warrant it, to reverse the unblocking process and reimpose freezing controls over funds which had been released but have not yet been spent. The area of sovereignty of the blocking procedure is narrowed as the availability of money through releases from freezing controls is enlarged.

The lessons of the monetary experiments of 1944–45 will undoubtedly be examined carefully by the governments of those countries in Europe which until now have done nothing or too little to prevent a runaway price inflation. The financial maladies of Rumania and Greece have reached a point where they are no longer amenable to monetary surgery of the kind employed elsewhere in Europe. Price and exchange control, never very effective in these countries, has broken down and monetary inflation has been fully reflected in price inflation. This, however, is not the case in Germany, and it is here that the experiences with post-war monetary schemes can be most fruitfully applied if agreement on the issue of monetary and financial reconstruction in Germany can be reached in the Allied Control Council. While the story of monetary reform in post-war Europe has by no means come to an end, it remains nevertheless true that the large measure of success achieved by the liberated countries in their fight against inflation is one of the most encouraging features of economic rehabilitation in Europe.

[43] This was even the case in Norway, despite the mildness of the monetary measures taken in that country. See Petersen, *op. cit.*

INTERNATIONAL ASPECTS OF AMERICAN AGRICULTURAL POLICY

By MARGARET S. GORDON*

Introduction

For a decade or more, a serious conflict has been developing in this country between the over-all objectives of our commercial policy and the measures which have been applied to our agricultural foreign trade. While we have been seeking to bring about a lowering of world trade barriers, our domestic agricultural program, with its price supports and production controls, has forced us to employ nationalistic measures in relation to our agricultural exports and imports. It has resulted, moreover, in a serious loss of export markets and the accumulation of enormous stocks in the hands of the Commodity Credit Corporation. In the case of two of our leading exports, wheat and cotton, we have been rather ineffectively attempting to cling to a diminished share in the world market by employing export subsidies.[1]

To escape from this unfortunate dilemma, the Department of Agriculture proposes a post-war policy of intergovernmental commodity agreements to stabilize world agricultural prices and curb unmanageable surpluses. Undoubtedly there will be a real need for international collaboration to handle certain post-war commodity surplus problems, but it may be seriously questioned whether commodity agreements negotiated largely with a view to protecting the price-support schemes currently in vogue in agricultural-exporting countries are likely to conform to the standards which the more cautious advocates of intergovernmental commodity arrangements would like to see enforced.[2]

It is the purpose of this article to analyze recent trends in our agricultural foreign trade policy and to raise the question as to whether a drastic change in our agricultural price policies is not long overdue. In the course of the discussion, we shall go over some ground that is familiar

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[1] These statements do not, of course, apply with complete accuracy to the situation which developed during the war, but rather to the trends which were apparent before the war and which are likely to reappear.

[2] This is not to deny that a strong general case can be made for international measures to curb agricultural price instability. (See discussion of commodity agreements, pp. 603–9, below.) For a good defense of the Department of Agriculture's position, see Robert B. Schwenger, "World Agricultural Policies and the Expansion of Trade," *Jour. Farm Econ.*, Vol. XXVII (1945), pp. 67–87.

to most economists, but this will be necessary in order to relate recent developments to long-run trends in our agricultural foreign trade and commercial policy.

Through the decisive votes in Congress in favor of the United Nations Charter, the Bretton Woods Agreements, the Food and Agriculture Organization, and ratification of the British loan, this country has firmly expressed its intention to participate in a program of world economic and political coöperation. A nationalistic agricultural policy could seriously interfere with the success of this program. If artificial supports for American agricultural prices are continued into the indefinite future, the harmful effects will not be confined to our foreign trade in agricultural products alone. High agricultural prices will tend to raise costs throughout American industry, thus hampering our entire export trade. Import barriers imposed to protect artificially high agricultural prices will injure American trade with predominantly agricultural countries and with other countries as well. Finally, and most serious, the entire movement to lower world trade barriers will suffer if this country adheres to the use of high tariffs, import quotas, and export subsidies in connection with its agricultural program.

Recent Trends in U. S. Agricultural Foreign Trade

The United States long since ceased to be a net exporter of agricultural products. Agricultural imports have tended to exceed agricultural exports since the middle 1920's, and agricultural exports have represented a steadily declining proportion of total exports for decades, as Table I indicates. There has been no persistent tendency for agricultural imports to increase faster than total imports, however. Imports of cer-

TABLE I—AVERAGE ANNUAL U. S. EXPORTS AND IMPORTS OF AGRICULTURAL PRODUCTS, 1900–1939

Period	Exports of Agricultural Products		Imports of Agricultural Products	
	In millions of dollars	As percentage of total exports	In millions of dollars	As percentage of total exports
1900–1904	873	61	488	50
1905–1909	963	55	667	50
1910–1914	1,157	50	909	53
1915–1919	2,638	41	2,019	63
1920–1924	2,093	46	1,888	54
1925–1929	1,792	37	2,216	53
1930–1934	767	37	877	50
1935–1939	762	26	1,214	51

Source: U. S. Department of Agriculture, *Agricultural Statistics*, 1941, pp. 481–82. Averages calculated by the writer.

tain tropical products which could not be produced in this country (*e.g.*, natural rubber and coffee) have always been high. Imports of the more competitive items might have increased somewhat faster but for the restraining effect of tariffs and other restrictions. During the drought years of the middle thirties, this country imported substantial amounts of certain commodities which were normally on an export basis. There is little doubt that the volume of agricultural imports would have been even higher in these years in the absence of tariffs.[3]

In spite of the technological improvements which continue to take place in American agriculture, the long-run tendency is almost certainly toward a greater dependence on imports. As population grows and the standard of living rises, domestic consumption of an increasing number of commodities will come to exceed domestic production. Price relationships, also, will tend more and more to favor imports, since increasing industrialization inevitably brings with it some loss in a nation's comparative advantage as an agricultural producer, even in the case of a country as richly endowed with land and other natural resources as the United States.[4]

One of the most crucial questions facing this country at the present time is whether the trend toward greater dependence on agricultural imports will continue to be resisted, as it was during the 1930's. Most European countries faced this type of situation during the nineteenth century and met the problem in a variety of ways. England, of course, is the leading example of a country which adopted a free trade policy, permitting her industrial exports to enjoy their maximum competitive advantage in international trade, while her workers were fed on low-priced imports from overseas.[5] Germany, along with a number of other countries in continental Europe, adopted the opposite course of protecting her farmers, especially her wheat-growers, from the competition of cheap grain imports from overseas.[6]

A continuation of the present trend toward a planned and regimented agricultural system in the United States will raise fundamental political questions bearing on the relation of the state to the individual producer.

[3] Butter imports, for example, were high in the first five months of 1935 but ceased altogether in June of that year because the margin between prices in London and New York had fallen to 10 cents, or four cents less than the duty. (*Cf. The New York Times*, June 19, 1935.)

[4] As manufacturing and distributive trades expand their activities, the prices of labor and other productive factors are bid up to the point at which farmers find it difficult to compete with agricultural producers in less well-developed countries.

[5] Belgium, Holland, and for many years, Switzerland, followed a course similar to that of the British. (*Cf.* J. B. Condliffe, "The Disposal of Agricultural Surpluses," *Jour. Farm Econ.*, Vol. XXIV [1942], p. 439.)

[6] For an interesting study of this whole question and the way in which agricultural protectionism was used to support the power of the Junker class, see A. Gerschenkron, *Bread and Democracy in Germany* (Berkeley, California, 1943).

In addition, this country's rôle in world trade and in a program for international economic coöperation will be profoundly affected by decisions reached in the field of agricultural foreign trade policy. The end of the war provides a unique opportunity for a drastic change in our agricultural program, since substantial readjustments will in any case be required during the transition period. Once the pattern of post-war agricultural production is established, changes will be far more difficult to accomplish.

Maximum development of our industrial potentialities can be achieved only through access to expanding world markets, and our undisputed industrial and financial supremacy places this country in a unique position to assume leadership in the movement for lower world trade barriers.[7] Fortunately there are indications that many American industrial leaders are beginning to recognize the need for lower tariffs, and it begins to look as if our agricultural policies may provide the greatest obstacle to a general liberalization of our import barriers.

It is natural for the farmer to regard increasing imports as a threat to his position as an agricultural producer, but this country, unlike Britain, is not likely to become dependent on imports for a major proportion of its food supplies. Larger imports would undoubtedly call for contraction in the production of certain commodities, but the outlook in any case is for continued contraction of the proportion of the population engaged in agriculture because of technological improvements and other factors.[8] The pattern of agricultural production, moreover, is certain to change. American farmers will find it to their advantage to concentrate more heavily on the production of foods which a prosperous industrial population needs to obtain chiefly from domestic sources—dairy and poultry products, certain types of meats, and fruits and vegetables. Shifts in these directions are taking place in any case, but the continuance of artificial price-supports for grains and other surplus crops will hamper the process and prevent dairy, poultry, and livestock producers from obtaining feed grains at lower cost. Similarly, artificially high prices for cotton and wool hamper American manufacturers of cotton and woolen goods in competing with foreign producers and with the rayon industry.

Although the American farmer is gradually becoming less dependent on export outlets for his chief crops, it by no means follows that he does not have an important stake in international trade. Full employment in

[7] *Cf.* U. S. House of Representatives, Sixth Report of the House Special Committee on Post-War Economic Policy and Planning, *The Post-War Foreign Economic Policy of the United States*, House Rept. No. 541, 79th Cong., 1st sess. (Washington, 1945), esp. pp. 8–12.

[8] *Cf.* T. W. Schultz, "Food and Agriculture in a Developing Economy," in T. W. Schultz, ed., *Food for the World* (Chicago, 1945), esp. pp. 316–19.

this country could mean a domestic market large enough to absorb a very substantial proportion of our agricultural output, except for a few leading export items. But full employment can scarcely be achieved in the absence of expanding international trade, whatever measures are adopted to support the post-war domestic economy.[9] In the long run, the farmer stands to gain most from policies which encourage expansion of his market both at home and abroad, even though this means lower agricultural prices and larger imports of certain farm products.

Tariffs, Quotas, and Subsidies

Agricultural protectionism in the United States is not a recent phenomenon. It dates back to the latter part of the nineteenth century, when successive tariff acts "benefited" the farmer by erecting tariffs on his products to "compensate" for the high tariffs which his industrial brethren were demanding on manufactured products. The Tariff Act of 1930 raised agricultural duties to new high levels. For the most part, these duties were meaningless at the time of their adoption, but after the Agricultural Adjustment Program came into effect, many of the agricultural rates in the tariff schedule took on a new significance. For the Program had the effect of raising American agricultural prices above world prices, thereby creating an artificial price level which could not have been maintained without protection against imports. In a few cases in which tariffs could not be relied on to keep out imports, quotas were introduced.[10]

To what extent has this wall of protection been modified by the Reciprocal Trade Agreements Program? The number of tariff reductions on agricultural products has been impressively large, covering the great majority of agricultural tariff items.[11] In a very substantial number of cases, moreover, the maximum 50 per cent reduction permitted under the original Trade Agreements act has been granted. Some of the reductions have been of considerable significance, *e.g.*, those on canned beef, certain grades of wool, and long-staple cotton. Many of the concessions, however, have applied to the less competitive items, and in a considerable number of cases, reductions on the more competitive items have

[9] The converse is also true, of course. International trade cannot be expected to prosper unless this country pursues with reasonable success a policy aimed at full employment.

[10] Quotas were imposed on imports of wheat and wheat flour, for example, in 1941, when the price of July wheat rose to a point at which it became profitable to import Canadian wheat over the tariff. (*Cf. The New York Times*, May 29, 1941.) They remained in effect until 1943, when they were suspended because of wartime conditions. (U. S. Department of State, *Bulletin*, Vol. VIII [1943], p. 386.)

[11] See U. S. Tariff Commission, *Changes in Import Duties since 1930*, rev. ed. (Washington, 1943) and Supplement (Washington, 1944).

been made applicable only to a specified quota of imports.[12] Tariff classifications have frequently been narrowed, moreover, to protect the American farmer at his more vulnerable points.

Tariff rates remain high on a number of leading American agricultural products. Among the more significant rates which have not been affected by the Trade Agreements Program are those on wheat (42 cents a bushel), butter (14 cents a pound), fresh beef (6 cents a pound), and the many important grades of wool not affected by the Argentine agreement.[13] As long as present agricultural price policies remain in effect, there is little likelihood that these higher tariffs on agricultural products will be reduced. There is a strong probability, moreover, that some of the import quotas which were suspended during the war will be restored.

In this connection, certain paragraphs in the State Department's recently published *Proposals for Expansion of World Trade and Employment* are highly significant. These proposals, which are intended to serve as a basis for an international trade conference to be held in the near future, outline the commitments which, in the view of the United States government, members of a proposed international trade organization should be asked to make. Import quotas would be outlawed as an instrument of commercial policy. Certain exceptions, however, would be permitted, including the use of import quotas on agricultural products in conjunction with (a) governmental marketing or production restrictions or (b) the distribution of surplus commodities to lower-income groups free of charge or at prices below the market.[14] This exception, which was undoubtedly included at the request of the Department of Agriculture, represents no real change in American government policy, since a similar provision was included in all the Reciprocal Trade Agreements. It merely recognizes the probability that current agricultural price policies, or something very like them, will be continued into the indefinite future.

The resort to export subsidies has also been closely related to the policy of supporting domestic agricultural prices, in this country as well as in a number of other countries. The United States government started

[12] Such cases include cattle weighing less than 175 pounds and 700 pounds or more (other than dairy cattle), whole milk (fresh or sour), cream (fresh or sour), certain types of fresh or frozen fish, white potatoes, Cuban filler tobacco, and certain molasses and sugar syrups (other than Cuban).

[13] On the better grades of clothing wool, the rate is 34 cents per pound clean content. Duties remain high, also, on sugar, certain imported grades of tobacco, and a number of other agricultural products. As a result of the wartime rise in prices, however, rates on the products mentioned, all of which are fixed in specific terms, are considerably lower when expressed in *ad valorem* terms than before the war.

[14] U. S. Department of State, *Proposals for Expansion of World Trade and Employment* (Washington, 1945), pp. 13–14. The proposals were accepted by the British in all important respects in conjunction with the recent loan agreement.

subsidizing exports of wheat and wheat flour in 1938.[15] A cotton export subsidy program followed in 1939. In both cases, the subsidies were intended to permit exporters to purchase at domestic prices and sell abroad at the lower world market prices.[16] Wartime conditions led to the suspension of the cotton program in 1942 and of the wheat program in 1943.[17]

But reintroduction of export subsidies did not await the end of the war. Under the provisions of the Surplus Property act, approved October 3, 1944, the Commodity Credit Corporation may sell surplus farm commodities for export at competitive world prices, even though the legal minimum price for comparable domestic sales is substantially higher.[18] Export subsidy programs were promptly inaugurated for wheat, wheat flour, and cotton, although in January, 1945, the subsidy on wheat was withdrawn.[19]

There is every indication that the use of export subsidies may be continued, and perhaps extended to additional commodities, when the expected post-war slump in world agricultural prices gets under way. Here again, the State Department's proposals on post-war commercial policy include a significant loophole. They provide that, within three years of the establishment of the proposed international trade organization, the use of export subsidies by members of the organization is to cease. If, however, a burdensome world surplus develops (or threatens to develop) in the case of a given commodity, and attempts to solve the problem through intergovernmental action fail, members may resort to export subsidies.[20]

There is no doubt that the employment of export subsidies by the United States government has had a disturbing effect on our international commercial relations.[21] Such a policy, moreover, encourages similar action by other countries at the very time when the United

[15] A more limited subsidy program, applying to exports of wheat and flour from the Pacific Northwest, made its first appearance in 1933.

[16] In the case of wheat and wheat flour, the exporter was to apply to the federal government for compensation to cover his actual loss. In the case of cotton, the amount of the subsidy was fixed. The average subsidy on wheat in the 1938–39 season amounted to 28.7 cents a bushel. (*Cf. The New York Times,* August 22, 1939.)

[17] *Ibid.*, July 22, 1942; and *Foreign Commerce Weekly,* July 27, 1943, p. 23.

[18] Public Law No. 457, 78th Cong., Sec. 21 (c).

[19] In November, 1945, the subsidy amounted to 4 cents a pound on cotton and to 18 cents a hundred pounds on wheat flour. (*The New York Times,* November 24, 1945.)

[20] No member may employ such subsidies, however, in such a way as to enlarge its share of the world market. (U. S. Department of State, *Proposals for Expansion of World Trade and Employment,* p. 16.)

[21] See, for example, the address of Mr. Dean Acheson (now Under-Secretary of State) at the cotton conference arranged by the Subcommittee of the House of Representatives for the Study of Policies of Post-War Agriculture. (U. S. Department of State, *Bulletin,* Vol. XI [1944], pp. 700–1.)

States is trying to exert its influence toward a restoration of liberal trade policies.[22]

Intergovernmental Commodity Agreements to Stabilize Agricultural Prices

1. *Current Proposals.* It is not our purpose to enter into a general discussion as to the merits of intergovernmental commodity agreements. We shall be concerned only with the rôle which such arrangements can be expected to play in stabilizing world agricultural prices. Most recent proposals for handling the problem of post-war surpluses in the agricultural field center around the use of such schemes and the need for international machinery to prevent their abuse.

It is widely recognized that supply and demand conditions for many basic agricultural staples are such as to create a special need for intergovernmental action to deal with burdensome surpluses. Although production tends to expand rapidly in response to price increases, its response to price declines is sluggish and sometimes perverse. In addition, the demand for commodities of this type is in most cases relatively inelastic. Hence arises the familiar phenomenon of abnormally low agricultural prices and large surpluses which is so characteristic of periods of severe depression. The problem is the more serious because of an apparent long-run tendency for the supply of agricultural products to increase more rapidly than the demand.[23] Thus there has been a pronounced tendency for governments to step in to protect the distressed producers, frequently through measures to support prices. These attempts have generally been unilateral, and their net effect on international trade has been highly restrictive. The case for coördinated intergovernmental intervention is therefore strong.

The emphasis in all recent proposals relating to intergovernmental commodity arrangements has been on getting away from the restrictive type of agreement which has been prevalent in the past. The recommendations which came out of the Hot Springs Conference, and which led to the formation of the United Nations Food and Agricultural Organization, stressed the importance of expanding agricultural production to meet the world's nutritional needs. This point of view dominated

[22] It may be argued, of course, that if the domestic price of a commodity is held above the world price through governmental price-supports, an export subsidy which merely compensates for this price-differential will not have a disturbing influence on the world market. This is not necessarily true. The relatively high domestic price will tend to stimulate domestic production and to discourage domestic consumption, so that the volume of exports may be larger than it would have been in the absence of intervention. Production restrictions will not necessarily interfere with this result. For a more extended discussion of this problem, see M. S. Gordon, *Barriers to World Trade* (New York, 1941), pp. 323–24.

[23] *Cf.* T. W. Schultz, "Food and Agriculture in a Developing Economy," in Schultz, ed., *op. cit.*, p. 307.

the Conference's conclusions on intergovernmental commodity arrangements, which, it was stated, should be "designed so as to promote the expansion of an orderly world economy."[24] Although no specific recommendation was made with respect to buffer stocks schemes, much of the discussion at the Conference centered around the proposal of the British delegation for the establishment of an international buffer stocks agency, which would purchase stocks during periods of declining prices and gradually liquidate them as prices revived in an attempt to counteract price fluctuations.[25]

The official position of the United States government on commodity agreements was given definite formulation with the publication of the State Department's *Proposals for Expansion of World Trade and Employment*.[26] The tone of the statement in relation to commodity agreements is extremely cautious. It is proposed that special intergovernmental commodity studies should be sponsored by the international trade organization, and that every effort should be made to correct maladjustments through the operation of market forces and particularly through exploring every possible method of stimulating consumption. Curtailment of production and trade through commodity agreements should be undertaken only if the situation requires drastic measures. Such agreements, moreover, should be regarded as transitional in nature and should provide for the correction of particular maladjustments through a program designed to promote shifts of resources and manpower out of over-expanded industries.[27]

Somewhat different is the impression one gets from a recent Department of Agriculture publication on post-war foreign trade problems in the agricultural field.[28] While stressing the need for coördinated programs

[24] United Nations Conference on Food and Agriculture, *Final Act*, U. S. Department of State, *Bulletin*, Vol. VIII (1943), pp. 566–67. It was further recommended that a body of broad principles should be agreed upon, to assure (a) the representation of consumers as well as producers, (b) increasing opportunities for the supplying of consumption needs from the most efficient sources of production at prices fair to both consumers and producers, (c) the maintenance of adequate reserves, and (d) provision for the orderly disposal of surpluses.

[25] The original British proposal rejected the use of trade or production restrictions in conjunction with the buffer stocks scheme, but in later discussions the American view that price stabilization could not be successfully achieved in the absence of such controls apparently prevailed. (*Cf.* Edward S. Mason, "The Future of Commodity Arrangements," in T. W. Schultz, ed., *op. cit.*, p. 244.)

[26] *Cf.* above. For an earlier statement by Bernard F. Haley in an address before the Academy of Political Science, see U. S. Department of State, *Press Release*, April 3, 1945, No. 289.

[27] *Cf.* U. S. Department of State, *Proposals for Expansion of World Trade and Employment*, pp. 20–21. Specifically, it is proposed that commodity agreements shall be effective for no more than five years, and shall not be renewable unless a review of the entire situation demonstrates a real need for their continuation and unless substantial progress has been made toward correction of the underlying maladjustments.

[28] U. S. Department of Agriculture, Interbureau Committee on Post-War Programs, *A Post-War Foreign Trade Program for U. S. Agriculture* (Washington, 1945), esp. pp. 19–22. The

to expand consumption and to achieve shifts in production along the lines of comparative advantage, this set of proposals seems to go rather far in the direction of a planned world agricultural system. Under the type of commodity agreement contemplated, extreme fluctuations in prices on the world market would be prevented through export controls and the establishment of upper and lower price limits which would be modified from year to year to conform with basic changes in demand and supply conditions. Buffer stocks would be maintained by the various national governments and possibly by an international agency as well. These stocks would be reduced or replenished to counteract price fluctuations but would not be permitted to fall below certain minimum levels. Production adjustments, brought about through appropriate production controls enforced by national governments, would be relied on to keep prices and stocks at the required levels. The plan apparently contemplates an extension of the "ever-normal granary" idea to the international arena. While there is nothing new or radical about these proposals,[29] one cannot escape the conclusion that a permanent system of control, rather than a mechanism for dealing with purely temporary maladjustments, is intended.

Whether the cautious attitude of the State Department will come to dominate the policies of the proposed international trade organization remains to be seen. During the first meeting of the United Nations Food and Agriculture Organization in October, 1945, it was apparent that many of the delegates, particularly from the large agricultural-exporting countries, favored the immediate establishment of an international agency, modeled after the Commodity Credit Corporation, to control the movement of agricultural products in world trade.[30] The debate on this proposal revealed sharp differences of opinion among the various delegations, and no positive action was taken. But in August, 1946, the Organization made public, as a basis for further discussion, the so-called "Orr Plan," under which a world food board would carry on buffer stock operations, with special provisions for disposal of surplus foods to needy nations.[31]

2. *Commodity Agreements and Parity Price Formulas.* Whatever the precise rôle of commodity agreements, there arises a most serious question as to how the parity price structure in the United States is to be

views outlined in this publication do not, of course, represent official U. S. government policy and are significant only in so far as they suggest the trend of thinking within the Department of Agriculture.

[29] They resemble closely the provisions of the Draft Convention for an International Wheat Agreement. *Cf.* p. 606, below.

[30] *Cf. The New York Times*, October 21, 23, 24, and 25, 1945.

[31] *Cf. The New York Times*, August 9, 1946. It was reported that President Truman's cabinet reacted unfavorably to the proposal.

reconciled with an international scheme of commodity price stabilization. As we have seen, the effect of our domestic agricultural policy has been to maintain American agricultural prices well above world prices. The system of parity prices, moreover, is based on a historical formula which bears no relation to competitive conditions in world markets. Under existing legislation, price floors for a substantial list of agricultural commodities are to be held at 90 per cent of parity until the end of a two-year period dating from the first of January immediately following the official end of hostilities.[32] Thus there is no prospect, short of repeal of this legislation, of any basic change in agricultural price policies before the end of 1948.

If artificial price differentials created by government control measures in major supplying countries are not eliminated, international commodity agreements can have but limited usefulness in stabilizing world agricultural prices. This difficulty can be concretely illustrated in connection with the International Wheat Agreement, the price provisions of which have not at this writing come into effect. The wheat agreement provides for "a basic minimum price and a basic maximum price of wheat, c.i.f. United Kingdom ports, and schedules of prices, c.i.f. and or f.o.b., equivalent thereto for the various wheats sold in world markets," these prices to be determined by the International Wheat Council.[33] As Dr. Davis has pointed out, wheat prices in the four major exporting countries have been so divergent that a wide range between maximum and minimum prices would undoubtedly have to be maintained.[34] This would probably mean that each exporting country would continue to determine its own price and subsidize, if necessary, to move its wheat into the world market. If and when all the provisions of the wheat agreement come into effect, subsidies may serve the purpose of permitting countries with relatively high prices to fill their export quotas, but will not, of course, enable them to compete for a larger share of the market.

It is difficult to see how a similar situation can be avoided in the case of cotton, if price controls are set up in the international cotton agreement now under consideration. The reintroduction of a United States export subsidy scheme has precipitated a general demand on the part of the major exporting countries for an agreement to stabilize exports. The fourth meeting of the International Cotton Advisory Committee,

[32] Public Law No. 729, enacted October 2, 1942. The date of the official end of hostilities must be determined by presidential proclamation or by concurrent resolution of both Houses of Congress.

[33] U. S. Department of Agriculture, Office of Foreign Agricultural Relations, *The International Wheat Agreement* (Washington, 1942), p. 9.

[34] J. S. Davis, *Wheat under International Agreement*, National Economic Problems, No. 410 (New York, Am. Enterprise Assoc., 1945), pp. 10–11.

held in Washington in April, 1945, recommended that a study group be appointed to prepare definite proposals for international collaboration to deal with the world surplus of cotton. It was agreed that an effective arrangement would require regulation of one or more of the following—exports, export prices, and production.[35] So long as existing price floors are maintained in this country, however, the differentials between the American price and prices of comparable grades of cotton in the other major exporting countries will undoubtedly have to be preserved, and the need for an American export subsidy will continue. It is significant that as yet no agreement has been announced.

The problem created by American parity prices, of course, is merely part of a much broader problem arising out of agricultural price controls existing in both exporting and importing countries. During the 1930's, prices in the major continental European importing countries were held far above world prices through price-fixing measures buttressed by rigid import restrictions. Such imports as did come in were to a considerable extent purchased from the smaller European agricultural-exporting countries under strictly controlled bilateral clearing arrangements or other similar devices. Thus the world market was narrowly restricted, and the impact of fluctuations in world supplies fell heavily on the major overseas agricultural-exporting countries, which in turn resorted to price supports and in some cases to export subsidies. If this type of situation should prevail in the post-war world, any attempt to stabilize international agricultural prices would operate under a severe handicap. It would be virtually impossible, moreover, to achieve the shifts in production which are so urgently needed from the point of view both of nutritional needs and of a more efficient utilization of productive resources.

3. *Other Problems Connected with Commodity Agreements.* The proposals for post-war international commodity agreements all emphasize the importance of representation of the consumer point of view in the negotiation and administration of such agreements. It is hoped that this will help to ensure against the restrictive and monopolistic tendencies which have been characteristic of many past agreements. Protection of the consumer interest can be achieved in part through the selection of men of broad judgment as members of the commodity commission, which will be one of the organs of the proposed international trade organization. As a further safeguard, the State Department proposes that in any such arrangements importing countries be given a voice equal to that of exporting countries. But can importing countries be relied on to represent the consumer's point of view? Probably they can if they are wholly dependent on imports to meet their requirements

[35] U. S. Department of State, *Bulletin*, Vol. XII (1945), pp. 772–73.

for the commodity in question.[36] In the more usual case, however, in which a country is dependent on imports for only a portion of its total consumption of the commodity, it is likely to be at least as much interested in protecting domestic producers as in securing a low price for its consumers.[37]

Secondly, all the current proposals for stabilizing agricultural prices through commodity agreements place considerable emphasis on the need for bringing about shifts in production along the lines of comparative advantage. This is certainly a desirable goal, but one may well question how successfully shifts of this kind can be encouraged within the framework of a system of international marketing controls. One of the most serious criticisms of international commodity agreements in the past has been concerned with their tendency to protect the position of relatively inefficient producers. Export quotas are usually allocated among the participating exporting countries in accordance with their relative shares in the world market in some previous period. Once a country has been assigned an export quota, it will be unlikely to submit to a reduction. If it is a relatively high-cost producer, moreover, it will tend to exert its influence in favor of a price high enough to permit it to fill its quota.

A further question concerns the possibility of controlling production of agricultural commodities on a world-wide scale. The Department of Agriculture's plan appears to rely heavily on production controls as the basic mechanism for offsetting the accumulation of excessive stocks and achieving production shifts. But among leading agricultural economists in this country, there has been an increasing tendency to question the effectiveness of existing methods of production control.[38] Restriction of acreage for a given crop tends to be accompanied by more intensive cultivation of the acres actually planted, especially if financial inducements are employed to bring about the desired restriction. A recent study indicates that no positive conclusions can be drawn as to the effectiveness of the AAA program in reducing production, although output was probably reduced somewhat below what it would have been if there had been no AAA.[39] Whether more effective methods, short of

[36] Even in such a case, however, political considerations may prevent an importing country from bargaining for the lowest possible price, *e.g.*, the United States in relation to Latin American coffee.

[37] Here we must beware of sweeping generalizations. The attitude of the country will depend on a great many factors—the importance of domestic production in relation to domestic consumption, the desire to make certain of adequate domestic supplies of the commodity in the event of war, the political power of farmers as a group, and so on.

[38] *Cf.* J. S. Davis, *On Agricultural Policy, 1926–38* (Stanford University, 1939), pp. 475–76; and T. W. Schultz, "Agriculture in the American Economy," *Am. Econ. Rev.*, Vol. XXX, No. 5 (February, 1941), pp. 136–39.

[39] *Cf.* G. Shepherd, "Changing Emphasis in Agricultural Price Control Programs," *Jour. Farm Econ.*, Vol. XXVI (1944), pp. 483–84. Comparisons of average production of leading

collectivism, of controlling the output of millions of individual farms can be devised remains to be seen. If critics of current agricultural policies have their way, the emphasis will be on shifts in production, rather than on restriction as such, in the future. As matters stand at present, however, one can easily visualize the accumulation of enormous stocks under an international scheme to control production and regulate prices.

This brings us to consideration of the proposal for an international buffer stocks agency. In theory, the operations of such an agency would be so managed as to ensure the fluctuation of prices around an equilibrium price, which would be subject to modification from time to time to conform with long-run shifts in basic supply and demand conditions. In practice, one may seriously question whether this result could be obtained. Even if political pressures could be left out of account, the equilibrium price would be difficult to determine. Actually, price goals would probably be determined largely as a result of the give and take of political compromise rather than on the basis of economic criteria. If past experience with similar schemes on a national scale is any guide, moreover, considerable pressure would be exerted on the international agency by interested groups to postpone the liquidation of stocks in periods of high or rising prices.

In emphasizing the difficulties which will stand in the way of attempts to stabilize agricultural prices through intergovernmental commodity agreements, it is not our purpose to demonstrate that such arrangements are of no value, but rather to stress the need for caution, especially with respect to elaborate plans for long-run price stabilization. If one could be certain that the views outlined in the State Department's proposals would dominate subsequent international negotiations, there would be no occasion to reiterate a note of caution here. It is not unlikely, however, that lip service may be paid to the State Department's views in setting up the international trade organization, but that subsequent negotiations for the solution of commodity problems may proceed along more or less traditional lines. If representatives of farm organizations in the major exporting countries press for the immediate adoption of price-stabilization schemes, it may be difficult for the proposed commodity commission to insist on the careful study of alternative measures which the State Department recommends.

Conclusions

How are the inconsistencies between our agricultural policies and our broad program for international economic coöperation to be resolved?

controlled crops for the years 1938–40 with that for 1930–32, just before the AAA program was put into effect, show that production of certain commodities increased or remained the same while production of other crops, notably cotton, decreased. In any case, huge unsaleable stocks had accumulated by the early 1940's, indicating that loan rates were too high to move the supplies actually being produced.

A satisfactory program from a theoretical point of view might embody features which would be utterly unacceptable politically. Fortunately, there are indications both within and outside the Administration of a growing recognition that changes are in order.[40] Without attempting to formulate a comprehensive program of agricultural reform, I should like to emphasize certain basic considerations which should be kept in mind in approaching the problem of international agricultural adjustment.

First of all, American agriculture cannot assume its appropriate position in post-war world trade unless parity price formulas are abandoned as soon as possible and replaced by policies designed to bring American agricultural prices into line with world prices. This may appear to be a rash suggestion in view of the political strength of the "farm bloc." But are farm bloc leaders irrevocably wedded to a policy of maintaining an agriculture price structure which has no relation to present-day realities? Undoubtedly, any attempt to remove all controls over farm prices would be vigorously resisted. But a politically acceptable policy might combine (1) gradual adjustment of most American agricultural prices to world prices, (2) some method of protecting the farmer from the impact of short-run market fluctuations, and (3) provision of financial aid to the farmer to encourage the necessary shifts in production.

Recently, a number of agricultural economists have suggested "forward pricing" plans under which prices would be related to market forces, but price goals (or forward prices) established in advance would eliminate much of the guess work for the farmer in planning his production. Most of these plans involve some method of compensating the farmer if the market price turns out to be lower than the forward price.[41] Forward prices would be revised from year to year to conform with shifts in demand and supply conditions.

Such a change in policy would pave the way for removal of many of the nationalistic measures which have been applied to our agricultural foreign trade. If the necessary reductions from present inflated price levels could be brought about gradually and a program of subsidies devised to aid the farmer during the transition period, it does not seem

[40] A committee of the American Economic Association recently reported on the problem of agricultural price policies and their effects. *Cf.* E. J. Working, "Report of *Ad Hoc* Committee on Agricultural Price Supports," *Am. Econ. Rev.*, Vol. XXXVI, No. 2 (May, 1946), pp. 817–26.

Recent speeches by Secretaries Byrnes and Anderson suggest that the administration recognizes the unfortunate effects of agricultural policies in relation to foreign trade. (*Cf. The New York Times*, November 24, 1945.)

[41] See the prize essays on the subject, "A Price Policy for Agriculture, Consistent with Economic Progress, That Will Promote Adequate and More Stable Income from Farming," in the *Jour. Farm Econ.*, Vol. XXVII (Nov., 1945).

See also *Postwar Agricultural Policy*, Report of the Committee on Postwar Agricultural Policy of the Association of Land-Grant Colleges and Universities (October, 1944) for a sound approach to the problem of agricultural adjustment.

altogether improbable that farm bloc leaders might be led to recognize the advantages which would accrue to the farmer in the form of expanded domestic and foreign markets.

My second suggestion concerns the approach to the problem of world agricultural surpluses. There is a danger that the success or failure of international coöperation in the commodity field within the next few years will be judged solely with reference to the number of international commodity agreements (or other stabilization schemes) successfully negotiated and put into effect. Actually, to the extent that national price policies result in substantial artificial price-differentials among competing countries, it may be very difficult to secure agreement on price-stabilization measures and perhaps even more difficult to operate agreements once they are put into effect. Thus the most important work to be accomplished lies in the direction of bringing national price policies more closely into line with international competitive forces. Neither the FAO nor the proposed ITO will be in a position to compel action along this line, but both agencies will be able to make strong recommendations to national governments.

Prices have been farthest out of line and nationalistic trade measures most pronounced, of course, in importing countries, especially on the continent of Europe. Any far-reaching changes in European agricultural policies will depend on successful international coöperation in many fields—in creating a real feeling of security against the threat of war, and in the fields of currency stabilization, international investment, commercial policy, and agricultural policy itself. But the agencies directly concerned with commodity problems can make a real contribution to this effort and should regard it as one of their most important functions. To a very considerable extent, the rigid agricultural import restrictions which came into effect in the early 1930's were imposed to protect agricultural producers from the impact of price instability in world markets. Agricultural-importing countries have a vital interest in international price-stabilization programs and might be induced to expand their imports substantially in conjunction with an international policy which would provide reasonable assurance against violent price declines and dumping. The reconversion period provides a unique opportunity for reorientation of European agricultural policies, since large imports (both in the form of relief and actual purchases) will in any case be essential until European production can be restored, and meanwhile plans can be made for a greater emphasis on the production of protective foods as opposed to the basic staples which have been so heavily protected in the past.

Finally, as an alternative to the buffer-stocks proposal, I should like to put in a word for an international price-stabilization scheme which would be specifically designed to deal with emergency situations. The real need, it seems to me, is for a plan which could be promptly put into

effect when world surpluses begin to appear and a serious decline in prices threatens. Why not set up an international agency which would be prepared to purchase excess supplies in such a situation and dispose of them relatively promptly by methods which would not depress prices in organized markets? It has frequently been suggested, for example, that something resembling our Food Stamp Plan could be worked out on an international scale, providing for the sale of food at lower-than-market prices to the unemployed or other low-income groups in various parts of the world.

Such a plan would, in one respect, have a more limited objective than the buffer-stocks proposal, since it would involve no attempt to offset rising prices through the sale of stocks during periods of upswing of the cycle. But agricultural production tends to expand quite rapidly in response to price increases. The real difficulty occurs in the downswing of the cycle, when production fails to contract. In view of the fact, also, that pressure might be exerted on an international buffer-stocks agency to postpone the liquidation of stocks, it is questionable whether price increases could be effectively counteracted by such an organization. The advantage of the emergency approach to the stabilization problem would lie in the greater possibility of avoiding the accumulation of enormous stocks, which would call for expensive storage facilities and would exert a prolonged depressing influence on the market. The chief limitation of such a scheme, on the other hand, would be associated with the possible difficulties involved in finding wide enough outlets for the surplus stocks without affecting organized markets. Solution of this problem would call for the active coöperation of many governments, but the potential contributions to improve nutrition should act as an important stimulus.

The emphasis in all the discussions leading up to the establishment of the United Nations Food and Agriculture Organization has been on the need for expansion of agricultural production to provide adequately for the nutritional needs of the world's population as a whole. In general, surpluses have appeared because of inadequate purchasing power in many parts of the world and among low income groups even in the wealthier nations, not because production has been excessive in relation to basic nutritional needs. Furthermore, the most serious deficiencies are to be found in the production and consumption of the so-called "protective" foods. In the light of these considerations, blind adherence to the restrictionist mentality which characterized agricultural intervention in the 1930's seems almost criminal today. It should be possible, though admittedly difficult, to develop a new approach which will eliminate the apparent conflict between the effort to expand production to meet nutritional needs, on the one hand, and to stabilize farm incomes on the other.

LANGE ON PRICE FLEXIBILITY AND EMPLOYMENT: A METHODOLOGICAL CRITICISM

By MILTON FRIEDMAN*

This article, initially undertaken as a conventional review of Oscar Lange's *Price Flexibility and Employment*,[1] has, in process, turned into a lengthy critique of the methodology used by Lange to evaluate the effects of price flexibility. This shift reflects contradictory impressions derived from a first reading of the book, impressions that paralleled and reinforced those derived from reading other work of the same kind. Here is an obviously first class intellect at work; yet the analysis seems unreal and artificial. Here is a brilliant display of formal logic, abstract thinking, complicated chains of deduction; yet the analysis seems more nearly a rationalization of policy conclusions previously reached than a basis for them. What is there about the type of theorizing employed that makes it sterile even in the hands of so competent a practitioner as Lange?

Lange's book is an excellent example to use in examining this question, precisely because it is, within its own frame of reference, so good. There is no magic formula for wringing knowledge about complicated problems from stubborn facts. No method is proof against incompetent application. The merits of a method of analysis can be judged only when it is carefully used by a master of it. Lange is clearly a master of what we shall later term taxonomic theorizing, and he has used it in this book to examine carefully an important problem. The book is, therefore, a good text for a methodological sermon.

I. *Summary of Lange's Analysis*

Lange seeks to answer the following question: Granted that the direct effect of a fall in the price of an underemployed factor of production is to increase the employment of that factor, what indirect effects may frustrate or reinforce this direct effect? There are, of course, an indefinitely large number of possible sources of indirect effects. Lange analyzes five: (1) changes in the demand for and supply of money (Chap. IV), (2) changes in expected future prices (Chap. V), (3) uncertainty (Chap. VI), (4) imperfect competition (Chap. VII), (5) international trade (Chap. VIII). The chapters dealing with these

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[1] Bloomington, Indiana: Principia Press. 1944. Pp. ix, 140. $2.00.

effects follow three chapters setting forth the problem and are followed by five chapters that seek to apply the analysis to an examination of (1) the "orthodox" theory which "denies that oversaving and limitation of investment opportunities can take place in an economy with flexible prices of factors of production and flexible interest rates" (p. 51), (2) the effects of "innovations," and (3) "the problem of policy," *i.e.*, the economic policy that ought currently to be adopted by society.

The analysis is consistently abstract; the style is perhaps best described as verbal mathematics; and the text is followed by a formal mathematical appendix analyzing the mathematical conditions for the stability of economic equilibrium. "Facts" are introduced to limit somewhat the range of possibilities considered, but, except for the final chapter, play no other rôle in the analysis. In the final chapter, which deals with "The Problem of Policy," facts are used to select from the bewildering variety of theoretical possibilities those that, in Lange's view, correspond most closely with the economic world prior to the First World War and subsequent to the second. As would be expected, the abstract reasoning is of a high order; Lange's past work has adequately demonstrated his mastery of formal logic, and his ability to manipulate symbols and concepts and to lead the reader astutely through a lengthy and abstruse theoretical argument.

The full detail of Lange's analysis of indirect effects cannot be reproduced here; a brief summary may indicate the kinds of indirect effects treated.

A. *Monetary Effects*

Suppose that an initial equilibrium position is disturbed by the appearance of an additional supply of some factor of production and that in consequence its price falls. This fall in price will stimulate the substitution of this factor for others (the intratemporal substitution effect), and the associated fall in the price of products produced primarily with this factor will stimulate the substitution of these products for products produced primarily with other factors (the expansion effect). These substitutions will in turn cause the prices of other factors and of other products to fall. Where and how will the process end?

This depends, in the first instance, on the monetary effect of these price changes. The initial and induced price declines increase the real value of the cash balances previously held by the community. If there is no change in either the real quantity of cash balances the community desires to hold or the nominal quantity of money, there is an excess supply of cash balances. The inflationary influence of this excess supply of cash balances prevents the prices of other factors and other products

from falling as much as the price of the factor initially underemployed and the prices of the products produced primarily with that factor, and thereby permits the initial price decline to be effective in producing a new equilibrium with full employment of the initially underemployed factor.

There is, in Lange's terminology, a positive monetary effect. But suppose the price declines lead to a reduction in the real quantity of cash balances available relative to the real quantity desired—for example, because the nominal quantity of money is reduced by a larger fraction than prices fall. This negative monetary effect is a deflationary influence that forces all prices down, leads to more unemployment than there was initially, and causes a cumulative decline in prices. Why should the nominal quantity of money remain constant, increase, or decrease? What is the mechanism or process whereby this occurs? Lange is not interested in such questions. He is enumerating theoretical possibilities, not describing the real world.

B. *Price Expectations*

Expectations about future prices constitute one important factor, so far neglected, that may cause a change in the real quantity of cash balances the community desires to hold. Suppose the fall in the price of the underemployed factor leads to a general expectation of a larger (percentage) fall in the price expected to prevail at a later date, and that the associated declines in prices of products and other factors lead to similar expectations about their future prices (elastic price expectations). It will then be advantageous to shift purchases from the present to the future. In so far as this shift affects the underemployed factor, it may partly, fully, or more than offset the direct increase in employment. In so far as it affects products and other factors, it is equivalent to a general desire to hold a larger real quantity of cash balances—to substitute money for goods. Unless the real quantity of money available increases at least proportionately, there will be a negative monetary effect. Similarly, if future prices are expected to fall by a smaller percentage than present prices (inelastic price expectations), it will be advantageous to shift purchases from the future to the present, the real quantity of cash balances that the community desires to hold will decrease, and the monetary effect will be positive unless the real quantity of money available decreases at least proportionately.

C. *Uncertainty*

The strength of the intertemporal substitution effects engendered by changes in expected future prices depends on the degree of uncertainty that attaches to these expectations. The periods of time for which men

will plan—their economic horizons—will be shortened by an increase in the uncertainty they attach to their expectations and lengthened by a decrease in uncertainty. "An economy with flexible factor and product prices is likely to involve greater uncertainty of price expectations than one in which some prices are rigid" (p. 34). In consequence, intertemporal substitution effects will tend to be smaller in the former than in the latter economy.

D. *Imperfect Competition*

Imperfections of competition arising from monopolies and monopsonies, or monopolistic competition and monopsonistic competition, add nothing new to the analysis; they necessitate solely a change in the form of statement. Oligopolies and oligopsonies are another matter. Lange regards a "kink" in the demand schedule as the essential feature of oligopoly, and in the supply schedule as the essential feature of oligopsony. These "kinks" imply discontinuities in the corresponding marginal revenue or marginal cost curves. In consequence, the marginal cost curve can shift without giving an oligopolist an incentive to change the output or price of his product, and the marginal-value-productivity curve of a factor can shift without giving an oligopsonist an incentive to change the quantity purchased or the price of the factor. Oligopoly and oligopsony may, therefore, thwart both intratemporal and intertemporal substitution, the incentive to a change in output or in the employment of factors being lost in the discontinuities. Indeed, if the underemployed factor is purchased solely by oligopolists, even the direct effect of a reduction in its price may be simply an increase in the oligopolist's profit, and no increase in employment.

E. *International Trade*

The final source of indirect effects, international trade, hardly deserves separate consideration. The direct effect of a reduction in the price of an underemployed factor is likely to be concentrated mainly in the country in which the factor is located whereas the indirect effects spread through the world. Consequently, if the country in question is a small part of a world in which trade is tolerably free, most of the indirect effects are experienced elsewhere and international trade is a stabilizing influence. If the country is a large part of the world economy, the indirect effects will have important reactions on it and "the result depends on the net effect upon the real quantity of money in the country under consideration" (p. 50).

II. *Criticism of Lange's Analysis*

"We have found," says Lange in summarizing some of his results at the beginning of the chapter on "The Problem of Policy," "that only

under very special conditions does price flexibility result in the automatic maintenance or restoration of equilibrium of demand for and supply of factors of production. These conditions require a combination of such a responsiveness of the monetary system and such elasticities of price expectations as produce a positive monetary effect, sensitivity of intertemporal substitution to changes in interest rates (if the positive monetary effect leads to a change in the demand for securities rather than to a direct change in the demand for commodities), absence of highly specialized factors with demand or supply dependent on strongly elastic price expectations, and, finally, absence of oligopolistic or oligopsonistic rigidities of output and input. To a certain extent, the absence of a positive monetary effect may be replaced by the stabilizing influence of foreign trade in an atomistic international market (among the different countries)" (p. 83).

The implication might be thought to be that these "very special conditions" for full employment will seldom or never be fulfilled. But such an implication is contradicted by Lange's next sentence: "There are good reasons to believe that these conditions were approximately realized in the long run during a period which extended from the 1840's until 1914" (p. 83).

This apparent contrast between "very special conditions" and their satisfaction for some 70 years emphasizes what seems to the reviewer the fundamental weakness of the kind of theorizing incorporated in this book—a weakness of the species, not of this example, since the book is perhaps as ably constructed an example of the species as one could hope to find.

A. *Alternative Theoretical Approaches*

Theory can be used in two very different ways in the development of a science. The approach that is standard in the physical sciences is to use theory to derive generalizations about the real world. The theorist starts with some set of observed and related facts, as full and comprehensive as possible. He seeks a generalization that will explain these facts; he can always succeed; indeed, he can always find an indefinitely large number of generalizations. The number of observed facts is finite, the number of possible theories is infinite; infinitely many theories can therefore be found that are consistent with the observed facts. The theorist therefore calls in some arbitrary principle such as "Occam's Razor," and settles on a particular generalization or theory. He tests this theory to make sure that it is logically consistent, that its elements are susceptible of empirical determination and that it will explain adequately the facts he started with. He then seeks to deduce from his theory facts other than those he used to derive it, and to check these

deductions against reality. Typically some deduced "facts" check, others do not; so he revises his theory to take account of the additional facts.

The ultimate check of deduced against observed facts is essential in this process. A theory that has no implications that facts, potentially capable of being observed, can contradict is useless for prediction: if all possible occurrences are consistent with it, it cannot furnish a basis for selecting those that are likely.

The approach used by Lange, and all too common in economics, is very different. Lange largely dispenses with the initial step—a full and comprehensive set of observed and related facts to be generalized—and in the main reaches conclusions no observed facts can contradict. His emphasis is on the formal structure of the theory, the logical interrelations of the parts. He considers it largely unnecessary to test the validity of his theoretical structure except for conformity to the canons of formal logic. His categories are selected primarily to facilitate logical analysis, not empirical application or test. For the most part, the crucial question, "What observed facts would contradict the generalization suggested, and what operations could be followed to observe such critical facts?" is never asked; and the theory is so set up that it could seldom be answered if it were asked. The theory provides formal models of imaginary worlds, not generalizations about the real world.

This formal approach takes a rather special cast in this book, a cast that tends, on the one hand, to conceal somewhat the formal and artificial character of the analysis, while, on the other, it gives special play to many of the weaknesses of formal theorizing in general. Theory is here used largely as a taxonomic device. Lange starts with a number of abstract functions whose relevance—though not their form or content—is suggested by casual observation of the world—excess demand functions (the orthodox demand schedule minus the orthodox supply schedule) for goods and money, the variables including present and future (expected) prices. He then largely leaves the real world and, in effect, seeks to enumerate all possible economic systems to which these functions could give rise. The kind of economic system and the results in that system will depend on the specific character of the functions and their interrelations, and there clearly are a very large number of permutations and combinations.

Having completed his enumeration, or gone as far as he can or thinks desirable, Lange then seeks to relate his theoretical structure to the real world by judging to which of his alternative possibilities the real world corresponds. Is it any wonder that "very special conditions" will have to be satisfied to explain the real world? If a physicist or astronomer were to explore all possible interrelations among a variable number of

planets, each of which could be of any size, density, or configuration, and possess any possible gravitational properties, he would surely find that only very special conditions would explain the existing universe. There are an infinite number of theoretical systems; there are only a few real worlds.[2]

Wherein is the procedure attributed to the natural sciences superior to the formal theorizing, and its taxonomic variant, adopted by Lange? Is it not preferable to derive all possible theories rather than a single theory? The reason this question cannot be answered with the affirmative it seems superficially to invite is that each theory included in the set of possible theories derived by the Lange approach is of necessity very different from, and much inferior to, the single theory devised to explain a full and comprehensive set of related facts. The attempt to construct a system of models leads the theorist to make each a formal entity. And this, in turn, leads him to consider an enormously oversimplified universe and to make classifications within that universe that have no direct empirical counterpart. The complexity of the approach, the limited range of factors it can comprehend, and the urge to have the results bear on pressing current problems are likely to, though they need not, lead him into positive error. The resulting system of formal models has no solid basis in observed facts and yields few if any conclusions susceptible of empirical contradiction. Lange's book offers apt illustrations of each of these points and we shall consider them in order.

B. *Structural Weaknesses of Lange's Approach*

1. *Oversimplification*—To make the search for all possible theories at all feasible, the theorist must start with but a few kinds of functions. If he insists on making his analysis specific, he will have to use only a few functions of each kind, and introduce only a few separate variables.

[2] Compare A. C. Pigou, *The Economics of Welfare*, 4th ed. (London, Macmillan, 1932), pp. 6–7.

"It is open to us to construct an economic science either of the pure type represented by pure mathematics or of the realistic type represented by experimental physics. Pure economics in this sense—an unaccustomed sense, no doubt—would study equilibria and disturbances of equilibria among groups of persons actuated by any set of motives x. Under it, among innumerable other subdivisions would be included at once an Adam-Smithian political economy, in which x is given the value of the motives assigned to the economic man—or to the normal man—and a non-Adam-Smithian political economy, corresponding to the geometry of Lobatschewsky, under which x consists of love of work and hatred of earnings. For pure economics both these political economies would be equally true; it would not be relevant to inquire what the value of x is among the actual men who are living in the world now. Contrasted with this pure science stands realistic economics, the interest of which is concentrated upon the world known in experience, and in nowise extends to the commercial doings of a community of angels. Now, if our end is practice, it is obvious that a political economy that did so extend would be for us merely an amusing toy. Hence it must be the realistic, and not the pure, type of science that constitutes the object of our search. We shall endeavour to elucidate, not any generalised system of possible worlds, but the actual world of men and women as they are found in experience to be."

(This approach is exemplified by much of what is termed "Keynesian" economics.) If he is willing, as Lange is, to keep his analysis exceedingly abstract, he can consider an indefinitely large number of variables and of functions of each kind, since, on the abstract level on which he has chosen to operate, multiplication of variables and functions of the same kind is likely to mean simply the insertion of appropriate "etc.'s" into the argument; it is not likely to add any essential complication.

The theorist thereby gains the appearance of generality without the substance. For example, Lange deals at most with four kinds of functions: they are the excess demand functions for (1) commodities (factors of production and products); (2) stocks (securities promising an indefinite income); (3) bonds (fixed-income securities); and (4) money.[3] There may be an indefinitely large number of functions of each of the first three kinds, since there may be many commodities, stocks, and bonds. And each function may have an indefinitely large number of independent variables, since excess demand is taken to be a function of all present and future (expected) prices. Further, other functions (cost functions, supply functions, etc.) are sometimes introduced. But the only purpose they serve is to provide a basis for imposing restrictions on the shape or structure of the excess demand functions.

The basic fact is that Lange's system—his abstract economic world—contains only four kinds of things and four kinds of functional relations. There is no room in his theoretical system (as contrasted with his digressions—see the discussion in Section II, C, 3, below of "friction") for such obviously important factors as lags in response, discontinuities in feasible investment undertakings, physical limitations on the time that it takes for economic activities to be initiated and conducted; or for differentiation in the structural rôle of different kinds of products or factors of production, different kinds of securities or bonds, or even different kinds of money. There is no room for any mechanism of response, except as the mechanism is incorporated in the abstract functions; or, in any fundamental sense, for uncertainty—probability distributions rather than single-valued expectations (see the discussion below in Section II, C, 4, of uncertainty). And even the functions considered are far from general; they are, for example, implicitly assumed to be single-valued.

The theorist who seeks to devise a generalization from observed facts will also have to simplify and abstract from reality. But it is clear that he need not limit himself to anything like so simple a system as Lange uses.

[3] A minor qualification is necessary when imperfect competition is introduced. This requires a change in the name of the excess demand function, but not in its abstract character or rôle.

2. Use of Classifications That Have No Direct Empirical Counterpart—A second weakness of formal theorizing, and especially the taxonomic variant adopted by Lange, is the kind of classifications to which it leads. The theorist starts with a simplified system, either specific and containing only a few functions and variables, or, as in Lange's work, highly abstract and nonspecific and containing many functions and many variables. He seeks to determine all results that can flow from the assumed system. The number of results, of possible interrelations among the elements of his system, is bound to be very large. Only a few of the combinations and permutations correspond with real worlds, since there are only a few real worlds. His desire to be realistic motivates him to classify his theories, results or concepts along lines that have a direct empirical counterpart. But such classifications will not fit the greater part of his theoretical structure, since only by chance would a classification suited to the small part of his analysis that corresponds with reality also be suited to the larger part that does not.

The theorist's urge to be realistic therefore almost inevitably conflicts with his urge to be theoretically comprehensive. The result is likely to be a compromise. He uses classifications (and especially names) that appear to have empirical meaning; but in order to apply them to his entire analysis, he is forced to define them in a way that eliminates their direct empirical content. The end result is likely to be classifications that do not satisfy the initial empirical motivation and yet are not those best suited to the theoretical analysis.

An example of a classification that has no direct empirical counterpart is Lange's classification of monetary changes as having positive, neutral, or negative effects. Lange considers that an initial decline in the price of an underemployed factor may have three ultimate results on its employment: (1) a new equilibrium at full employment of that factor, (2) continued underemployment of that factor of the same magnitude as the initial underemployment, (3) a cumulative increase in the underemployment of that factor.[4] In discussing the effect of changes in price expectations and in the monetary system on the ultimate result, he is naturally led to classify different kinds of changes in price expectations and the monetary system according as they lead to one or another result. If they result in full employment of the initially underemployed factor, the monetary effect is said to be positive; if they result in continued underemployment at the initial level, the monetary effect is said

[4] Lange recognizes the existence of two other possibilities: continued noncumulative underemployment (4) less than the initial underemployment, or (5) more than the initial underemployment. He disregards these because they imply multiple positions of equilibrium and "the possibility of multiple equilibrium . . . seems to be very unlikely in practice." The adequacy of this justification is discussed below (see Sec. II, C, 1, below). In principle there are still other possibilities involving one or more changes in direction.

to be neutral; if they result in a cumulative increase in underemployment, the monetary effect is said to be negative.[5]

The words used lead one to expect that a neutral monetary effect, for example, would be produced by some kind of a neutral monetary policy, a policy that in some way would involve setting up a monetary framework and then not manipulating it in response to detailed economic changes. Nothing like this is the case. An explicit monetary policy aimed at achieving a neutral (or positive or negative) monetary effect would be exceedingly complicated, would involve action especially adapted to the particular disequilibrium to be corrected, and would involve knowledge, particularly about price expectations, that even in principle, let alone in practice, would be utterly unattainable.

Similarly, suppose one could observe in isolation the reaction of an economic system to the initial underemployment of a single factor of production. Would it be possible to tell whether the monetary effect was positive, neutral, or negative? One could observe the result and then say that the monetary effect was of the kind stated as necessary to produce that result. But this would, of course, be pure tautology. One could not, by any reasonable stretch of the imagination, obtain and combine the information about monetary action, price expectations, and the shape of the relevant functions that would be necessary to determine what the monetary effect would be and thereby to predict the ultimate result. Lange's classification is designed to classify theoretical possibilities; it has no direct counterpart in the real world.[6]

C. *Errors of Execution Fostered by Lange's Approach*

The weaknesses of oversimplification and unsatisfactory classification so far considered are implicit in the logic of the formal theorizing, and its taxonomic variant, adopted by Lange. The errors of execution to be considered now are not. Psychological, not logical, considerations make them likely. It is obviously impossible to make a comprehensive list of possible errors; there is no limit to the kinds of errors mortal man may commit. We shall, therefore, restrict the discussion to the following, which are exemplified in Lange's book: (1) casual empiricism; (2) invalid use of inverse probability; (3) introduction of factors not included in the fundamental theoretical system, exemplified by the introduction of "friction"; (4) unwillingness to accept logical but unrealistic implications of the system, exemplified by the treatment of "uncertainty."

[5] This definition is, in part, read into Lange. His explicit definition is in terms of the relative changes in the demand for and supply of money; as he uses it, this definition reduces to that stated above.

[6] Two other examples of classifications that have no direct empirical counterpart are the classification of claims into stocks, bonds, and money (p. 15) and the classification of the set of elasticities of price expectations as prevailingly elastic, inelastic, or of unit elasticity (p. 22).

The first two are fostered by the complexity induced by the taxonomic approach and the resultant desire to limit the number of possibilities considered; the second two, by the urge to be realistic.

The number of permutations and combinations of even a small number of elements each of which can have several forms or values is so large that there is a strong incentive to limit the number of possibilities considered in detail. One obviously attractive method, though one that is really inconsistent with the basic theoretical approach, is to rule out possibilities that on one ground or another can be judged "unrealistic" or "extreme." There is nothing wrong with this procedure if the evidence on which the possibilities are judged to be unrealistic is convincing. The danger is that the urge to simplify and the preoccupation with abstract logic will lead to the ruling out of possibilities on grounds that are either unconvincing or wrong. Lange does not avoid this danger. He rules out many possibilities simply by asserting that they are unrealistic, without presenting any empirical evidence (casual empiricism), and others because they are special theoretical cases (invalid use of inverse probability).

1. *Casual empiricism*—The example of casual empiricism that shows the motivation best is Lange's statement: "These complications are disregarded in the text in order to simplify the argument and also because they do not seem to be very important in practice" (p. 57n). The complications in question are certain possibilities that arise when, contrary to the assumption made in the text, the "amount of real excess cash balances available . . . [enters] as an independent variable in the function expressing the propensity to consume" (p. 57n). The statement does not, therefore, refer to facts of immediate experience; yet no evidence is given for the validity of the empirical conclusion.

The example that perhaps shows best why no confidence can be placed in such statements and how difficult it would be to test them is a statement cited in footnote 4: "We disregard, however, the possibility of multiple equilibrium because it seems to be very unlikely in practice" (p. 10, footnote 13). How could this empirical statement be tested? One way would be to evaluate explicitly from empirical evidence, or, at least, discover the form of, each of Lange's indefinitely numerous equations, and determine mathematically whether, and if so, under what conditions, the resultant system of equations has one or more solutions for a relevant range of values of the independent variables.

Another way would be to specify some criterion for determining when an empirical situation is an equilibrium position in Lange's system and when it is a disequilibrium position in the process of being corrected; secure data on both the dependent and independent variables for a large number of empirically realized equilibrium positions; classify these

positions into sets for which the values of the independent variables are the same; and for those sets (if any) containing more than one position compare the dependent variables to determine whether they are the same.

Lange, of course, presents no evidence along either of these lines; it seems exceedingly doubtful that it would be feasible to do so; and there appears to be no other method of judging from empirical evidence the likelihood of multiple positions of equilibrium.

Another example of casual empiricism is Lange's statement that "empirically it seems highly unlikely that there is any decrease at all in the rate of increase of uncertainty" (p. 33, footnote 12). The only definition of uncertainty Lange gives leaves at least one numerical parameter unspecified.[7] Even if specific values were given to the unspecified parameters, it is exceedingly doubtful that it would be possible, even in principle, to measure the degree of uncertainty attached to a man's expectations about future prices, as Lange defines that term. Yet he finds it possible to make an empirical statement about not only the first derivative of uncertainty but even the second derivative.[8]

The kind of casual empiricism exemplified by the statements quoted and cited is bad empiricism not because these statements are wrong, but because there is no way of telling whether they are right or wrong. None of them refers to a fact of immediate experience about which the reader can be expected to be an expert,[9] or a fact about which Lange can be expected to be an expert, or a fact that thorough and widely-known empirical research has so firmly established that it can be taken as demonstrated without citation. Yet they are simply asserted to be true and not a shred of evidence is offered for them. The reader must take them or leave them, he cannot judge them. If this is good practice for empirical work, it is equally good for theoretical. Lange might as well simply assert his theoretical conclusions without giving the basis for them; and no empirical worker need hesitate to assert: "It is obvious on theoretical grounds that . . . ."

In the absence of the empirical evidence, no one of Lange's empirical

[7] Lange defines the degree of uncertainty of price expectations as the difference between two extreme expected prices, the higher being attributed a probability x of being exceeded, and the lower a probability y of not being exceeded (Lange does not introduce these symbols, but gives a numerical example in which both x and y are .05). x and y are the unspecified parameters referred to above. A single parameter would suffice if x were always required to be equal (or bear any other fixed relation) to y or if the degree of uncertainty were defined as the width of the narrowest price band (or set of price bands) within which the entrepreneur feels z per cent confident $[z=100(1-x-y)]$ that the future price will be.

[8] Other examples of what I have called "casual empiricism" appear on pp. 9, 29, 40, 53, 59, 61, 65, 67, 74. This list is not intended to be exhaustive.

[9] Lange makes a few empirical statements that might be interpreted as referring to facts of immediate experience. These have been excluded from the list given in the preceding footnote.

statements can be considered more than a conjecture, and his theoretical analysis must be considered incomplete and fragmentary, since he uses these empirical statements to limit the number of possibilities analyzed.

2. *Invalid Use of Inverse Probability*—A second method which Lange uses to reduce the number of possibilities he considers is to rule out certain possibilities because they are "special cases." The quotation cited earlier from the beginning of Lange's chapter entitled "The Problem of Policy" demonstrates that Lange realizes that "very special" theoretical conditions may well be empirically realistic. Yet elsewhere he writes as if this were impossible. For example, Lange asserts that "the marginal-revenue schedule (of a monopolist) is negatively sloped ... as a rule, because the demand schedules are assumed in the text to be negatively sloped. Exceptions are possible when the demand schedule has a strong curvature which is convex toward the axis of abscissae" (p. 37).

But how does he know that what he calls "exceptions" are not the rule in experience? The only justification he gives for regarding them as exceptions is the sentence just quoted. The implication of this sentence presumably is that "a strong curvature which is convex toward the axis of abscissae" is mathematically a special case; that if all possible negatively sloping curves were enumerated, only a small fraction would have this property. The conclusion that only a small fraction of real marginal revenue schedules have this property follows only if certain assumptions are made about the probability of the various mathematical possibilities. But there is no basis for assigning such probabilities; the conclusion therefore represents an invalid use of inverse probability reasoning.[10]

The essence of the fallacy can be more simply indicated by an example that is faithful to Lange's logic, but refers to immediately observable facts. We start with the proposition that the price of a single newspaper will be a whole number of cents. The price of a newspaper could be 1 cent, 2 cents, 3 cents. . . . We conclude that, as a rule, the price will be more than 10 cents, since there are only 10 possible prices equal to or less than 10 cents, but an indefinitely large number more than 10 cents, and a price of 10 cents or less is therefore a "very special" case. The conclusion is of course false, yet the reasoning by which it was reached does not differ from that implied by Lange at many points.

If this kind of reasoning is to lead to valid conclusions, there must be

[10] None of the examples in Lange of what seems to be invalid use of inverse probability is as explicit as the hypothetical example given in the next paragraph of the text. The attribution of this fallacy to him, though it involves some measure of interpretation, seems justified both by the general phrasing and the absence of any other possible basis for statements he makes. The justification is clearest for the example cited above and the parallel example on the same page dealing with the marginal expenditure schedule of a monopsonist. For other, somewhat less clear examples, see pp. 51, 53, 65, 68, 69, 80.

some basis for judging the probability of the various theoretical possibilities. A classical example where this is possible is the reasoning underlying the conclusion that, under essentially static conditions, demand curves are, as a rule, negatively sloped. The exception, Giffen's paradox of a positively sloped demand curve, corresponds to conditions (inferior good, large income effect relative to substitution effect) that are not only theoretically special, but also appear empirically special, as judged by everyday observation of the world.

3. *Introduction of Friction*—We turn now to a pair of errors that derive less from the urge to simplify than from the urge to be realistic. As said above, the urge to be realistic is likely to conflict with the urge to simplify. When it does, one way to attain both objectives is to be illogical. Lange's book provides examples of two quite different devices whereby realism can be gained by the sacrifice of logic: the introduction of "friction," and the treatment of uncertainty.

Despite the numerous possible results that can flow from Lange's simplified theoretical system, there are realistic possibilities left out. As mentioned earlier, there is no place in Lange's system for lags in response, for delayed reactions, for the manifold hindrances to change we are wont to refer to as "friction." Accordingly, to make the possibilities he considers more comprehensive, Lange introduces friction. For example, "with some friction present, the effects of changes in factor prices may become too weak to be of great practical significance" (p. 34).[11] Despite Lange's care to define such terms as "securities," "bonds," "money," and "products," he nowhere defines "friction." There is a very good reason for this. Lange's "friction" is a *deus ex machina*, it has no place in his theoretical system; he cannot really define it without going outside his system, and, indeed, contradicting it.

His system contains equations purporting to show the excess demand for commodities, stocks, bonds, and money as a single-valued function of all present and future (expected) prices. What can friction mean in terms of this system? It might be interpreted as meaning that the excess demand is not always that shown by the equations; but that would simply mean that the equations were wrong. Either a different system of equations is required (for example, one containing stochastic elements), or no system of equations exists that describes the economy about which Lange is talking. It might be interpreted as meaning that excess demand is a function not only of present and future prices but also of past prices and quantities. (This seems the interpretation

[11] Friction is introduced on pp. 18, 19, 34, 47, 51, and 61. On p. 51 it is used in describing an "orthodox" position. The other five uses are all in connection with Lange's own analysis. It is interesting that, in each of these cases, friction is introduced to minimize the possible favorable influence of flexible prices on employment; at no point is it introduced as a factor that might offset unfavorable influences.

that accords best with common-sense notions about friction.) But then the equations should be rewritten and the system expanded to include these additional variables; if this were done, friction would disappear as a separate entity.

There are presumably other possible interpretations, but those I have been able to think of are either inconsistent with Lange's theoretical system or require a thorough revision of the system; none gives "friction" a separate existence as a supplement to Lange's theoretical system. Those of Lange's conclusions that rely on the introduction of friction are therefore different in kind from the rest of his conclusions. They are not the logical implications of a consistent theoretical system, but simply *obiter dicta* whose acceptance involves implicit expression of scepticism about the rest of the analysis.

4. *Treatment of Uncertainty*—Lange's treatment of uncertainty exemplifies an unwillingness to carry his theoretical reasoning to its logical conclusion if that conclusion is clearly unrealistic. The phase of uncertainty with which he deals is the uncertainty attaching to men's expectations about future prices. "At best, the entrepreneur or consumer expects that a given future price can have *a set of possible values*, some probability corresponding to each of these values" (p. 29; italics in original). To deal with these stochastic phenomena in full generality would enormously complicate the analysis. Lange avoids this by arguing that "we can substitute for the most probable prices expected with uncertainty equivalent prices expected with certainty. Let us call them the *effective* expected prices .... By means of this device, uncertain price expectations can be reduced to certain ones. In consequence, an increase in sellers' uncertainty acts in the same way as a reduction of their expected future selling prices, while an increase in buyers' uncertainty acts in the same way as an increase in their expected future prices of purchase" (pp. 31–32).

The substitution of a single "effective expected price" for a probability distribution of expected prices is a definite departure from the taxonomic approach followed in most of the book. The taxonomic approach would require consideration of all possibilities—those in which a single price cannot be substituted for a probability distribution of expected prices, as well as those in which it can. Such generality could have been attained by treating the entire probability distribution, rather than a single "effective expected price," as an independent variable in the appropriate excess demand function. The resulting model would, formally at least, have been consistent with any observable phenomenon and hence, like most of Lange's theoretical system, incapable of empirical contradiction.

This is not true of the partial model that results from Lange's de-

parture from his usual procedure. Since it is only a partial model, its implications need not include all possible observable behavior; hence it is susceptible of empirical contradiction. Lange does not test his model by deducing all its implications and comparing them with actual behavior. He states some of the implications of his model and these are all consistent with actual behavior. He does not, however, state all the implications of his model. Had he done so he would have found, as we shall show, that some of them are contradicted by the actual behavior of men in the presence of uncertainty. His model must therefore be rejected.

Lange uses his model "to determine the length of the period of time over which individuals plan their purchases and sales. This period has been called very aptly the *economic horizon* of the individual. As long as price expectations are *subjectively* certain, the economic horizon is indeterminate. This indeterminateness disappears when uncertainty is allowed for.

"As a rule, the uncertainty of price expectations is the greater the more distant the planned purchase or sale is (at least from a given date on) . . . . Consequently, the effective expected prices of goods to be sold at various future dates decrease, while the effective prices of goods to be bought at various future dates increase. This imposes a limit upon the dates for which any sales or purchases are planned at all. Firms (entrepreneurs) find that, beyond a certain date, the effective expected prices of their products are less than the effective expected marginal costs and that the effective expected marginal value productivities of the factors they plan to employ are less than the effective expected prices of these factors. In a similar way, households (consumers) find that beyond a certain date the effective prices of goods they plan to buy are higher than the effective marginal rates of substitution of the respective goods for money. Thus beyond a certain date the effective expected prices of goods to be sold are too low to induce the planning of sales, while the effective expected prices of the goods to be bought are too high to induce the planning of purchases. No sales or purchases are planned beyond this date. In this way the length of the economic horizon of each individual and corporation is determined" (pp. 32–33).

Now this conclusion, which is as far as Lange goes, sounds eminently reasonable. No man plans specific purchases or sales extending into the indefinite future. It does not pay to do so when the future is uncertain. And if this were (a) a necessary implication and (b) the only logical implication of Lange's theoretical model, no fault could be found with the model. But neither condition is satisfied. It is not a necessary implication because the effective expected selling prices could fall at a rapidly decreasing rate, the effective expected buying prices (for com-

parable units) could rise at a rapidly decreasing rate, both could approach asymptotes, and the asymptote of the selling prices could be above the asymptote of the buying prices. In this case there would be no finite economic horizon.[12]

Suppose effective expected selling prices decline and buying prices rise at rates that make the economic horizon finite. Lange's conclusion is then a necessary implication of his model, but by no means the only implication, and some of the other implications are far less reasonable. Consider again his model in terms of an individual family. According to the model, the head of the family can be supposed to behave in the real and uncertain world as he would in a fictitious world in which he expected with certainty that his income would decline steadily over time and that the prices of the things he buys would increase steadily over time.

In the fictitious world, these are not conjectures; they are expectations held with certainty. He is certain that ultimately his current income will be so small relative to the prices of the things he wishes to buy that starvation will be inevitable for his family unless he can command resources other than his current income. (This follows from the conditions imposed on the rates of rise and decline in order to assure a finite economic horizon.) His first impulse will be to save and thereby provide additional resources. But it will do him no good to save in the form of money, since the certain rise in prices will wipe out the real value of the savings. Nor will it do him any good to save in the form of securities, since these will then become something he wants to sell, and Lange tells us that he must be assumed to behave as if he expected with certainty that the prices of goods to be sold will decline. It will therefore be even worse to put his savings in securities than to keep them in cash. How can he escape this dilemma, since everything he touches turns to ashes?

One escape is to convert his savings into physical stocks of foodstuffs and other necessities and store them in storage space he purchases outright. (If he were to rent storage space, he would expect with certainty that the rent would rise so high that at his economic horizon he could not meet it.)[13] If he were fortunate; that is, if the expected future prices

[12] In a footnote attached to the passage quoted above, Lange states: "There is good reason to believe that the risk premium increases at an increasing rate as the date of the planned purchase or sale extends farther into the future. . . . Our conclusion in the text is quite independent of the fact that the increase in the risk premium takes place at an increasing rate." The condition in the first of these sentences would be sufficient to guarantee a finite economic horizon, though it is more stringent than is necessary. The second of the sentences is therefore wrong or misleading. If the risk premium is not assumed to increase at an increasing rate, some other condition must be imposed to guarantee a finite economic horizon.

[13] If we were to extend Lange's Model to uncertainty about things other than prices, even stockpiling would be no solution. There is some uncertainty about the future safety of goods in the stockpile; they might deteriorate or be destroyed by disaster. Following Lange, we may

of goods to be bought did not rise too rapidly or of goods to be sold fall too rapidly, and if the expected life of his family (also converted presumably into an equivalent single value expected with certainty) were not too long, he and his family might be able so to contrive their affairs as to die natural deaths. The only other alternative to letting nature take its course at the appointed time is definitely to plan to commit suicide at a definitely specified future date. If the pincers of falling selling prices and rising buying prices is expected with certainty to close so fast that no possible skimping can yield a stockpile sufficient to last until natural death ends all planning, what else is there to do but plan for suicide?

Whichever alternative the man adopts, if we assume him to behave as if he expected with certainty falling income and rising prices, his actions will be affected immediately, and not only when the economic horizon arrives (as of course it never would, since he would soon find out that he was wrong to hold expectations with certainty). He will immediately curtail his standard of living below the one he would adopt if his expectations were rosier, and immediately start accumulating physical stockpiles and buying storage space. And similarly, business men, acting in accordance with Lange's model, would immediately start planning the liquidation of their enterprises.

This is, of course, a fantastic picture. It certainly does not correspond to the way men behave when faced with uncertainty. Yet it is a logical consequence of Lange's model, arrived at simply by filling in the gaps in Lange's deductions from the model.[14] The model must either be discarded or all its implications, and not merely those that seem realistic, be accepted. The device Lange adopts to simplify his analysis apparently also makes it a false image of reality. His model does not allow, in any fundamental sense, for stochastic variation.

III. *Conclusion*

We have not considered Lange's application of his theoretical analysis to "The Problem of Policy," as he entitles the last chapter of his book,

substitute for the actual expectations the certain expectation that a specified fraction of the stockpile, and no more, will be usable. This fraction will decline with time. Ultimately, therefore, even the stockpile will not suffice.

[14] The point can be put more nearly in Lange's own terminology. Lange draws the conclusion from his model that "no sales or purchases are planned beyond this date [the economic horizon]" (p. 33). The argument above is that his model justifies the broader conclusion: "It is planned to make no sales or purchases beyond this date." This broader conclusion implies the conclusion Lange states but is not implied by it. The fact that this broader conclusion is an implication of Lange's model, means that Lange's footnote 15 on p. 33, in which he argues that "the economic horizon, as here defined, does *not* limit the time over which provisions for the future are made," is inconsistent with his model, though reasonable as a description of human behavior.

nor do we intend to do so. This chapter represents the combination of unsupported empirical statements and theoretical conclusions that, as we have seen, neither deserve any particular confidence nor bear very directly on the real world. The lack of relevance of most of the theoretical analysis to the real world that derives from oversimplification and formal classification is concealed by the errors of execution enumerated above—casual empiricism, invalid use of inverse probability, introduction of factors external to the theoretical system, and the use of only some of the implications of a formal model that has others that are unrealistic.

Correction of these errors would make the analysis formally correct; it would also make it abundantly clear that the analysis has only the remotest bearing on problems of policy. The analysis would then assume the cast of Lange's mathematical appendix—which no one would be likely to consider directly applicable to problems of policy. Indeed, the analysis purged of the fallacies might best be formulated mathematically, since this would be more likely to assure logical rigor and, in addition, would avoid a tendency, almost unavoidable in verbal mathematics, to state conclusions that flow from special assumptions as if they had wider relevance, and to stress special cases that lead to conclusions of particular interest.

The basic sources of the defects in Lange's theoretical analysis are the emphasis on formal structure, the attempt to generalize without first specifying in detail the facts to be generalized, and the failure to recognize that the ultimate test of the validity of a theory is not conformity to the canons of formal logic but the ability to deduce facts that have not yet been observed, that are capable of being contradicted by observation, and that subsequent observation does not contradict. In consequence, these defects are found in much economic theorizing that is not taxonomic in character. They are, however, especially likely to arise when the taxonomic approach is adopted, as their presence in the writings of so able and careful a theorist as Lange testifies.

A man who has a burning interest in pressing issues of public policy, who has a strong desire to learn how the economic system really works in order that that knowledge may be used, is not likely to stay within the bounds of a method of analysis that denies him the knowledge he seeks. He will escape the shackles of formalism, even if he has to resort to illogical devices and specious reasoning to do so. This is, of course, a poor way to escape the shackles of formalism. A far better way is to try to devise theoretical generalizations to fit as full and comprehensive a set of related facts about the real world as it is possible to get.

COMMUNICATIONS

National Budgets and National Policy: A Rejoinder

Dr. Mosak's paper in the March number of this *Review* strikes me as seriously misleading on questions of facts and analysis and still more so on questions of policy.

Facts and Analysis

The patience of the reader cannot reasonably be taxed by a detailed rejoinder to Dr. Mosak's detailed attack on my discussion of the magnitudes involved in the "models"; though a few points will come up, illustratively, below. His acuteness has picked up several oversights in my original article,[1] and at many points the reader who is interested in the in's and out's of model-building will find valuable interpretations and corrections. On the whole, however, my impression is that a careful audit will show that the main points of my article are not seriously shaken.

What deserves examination here is Dr. Mosak's exaggerated idea as to what can be "demonstrated" by the type of evidence he deals in. The most that can ever be said for a hypothesis in relation to a set of observations is that the observations have *failed to disprove it.* In some circumstances this is saying a great deal. If the hypothesis has behind it the weight of general professional knowledge because it is part of a well-integrated theoretical structure other parts of which are well tested; if the hypothesis is clearly formulated in terms to which the data are relevant; and if the data provide numerous opportunities for failure—on these conditions, survival after confrontation with observations justifies confidence in the hypothesis.

These specifications for confidence do not fit Dr. Mosak's "models." To illustrate, consider the hypothesis on individual savings implied by his "consumption function." The hypothesis his equations express is that savings (*i.e.*, the excess of disposable income over expenditure) are determined by the level in current dollars (without correction for either population or prices) of disposable income. This implies that a difference in income level reflecting prices and population has just the same effect on saving as one reflecting unemployment. There is no reason in economics why this should be so. On the basis of the so-called "money illusion," one could make sense of a hypothesis that year-to-year *changes* in saving are determined by year-to-year changes in disposable income, on an undeflated basis. But the "money illusion" rests on the notion that people remember their past

[1] The oversight I most regret, however, is one Dr. Mosak was too courteous to mention—the inadvertent omission of his name from the list of those whose criticisms helped in the preparation of my article. Dr. Mosak was generous not only with the use of unpublished materials, but with specific written criticisms, in the light of which I rewrote the article in a way which I (but not, I fear, Dr. Mosak) regard as a great improvement.

nominal incomes while failing to notice that the real meaning of the dollar has been altered by price changes. Over long stretches of time, when people in a given economic situation are no longer the same individuals who were in the corresponding situation earlier, a hypothesis resting on the money illusion is *prima facie* nonsense. Failure to deflate current-dollar figures thus involves refusal to put the economic records in a form which permits testing any meaningful hypothesis.[3]

Alleged Concessions on Points of Fact

Dr. Mosak is in error when he asserts that "the critics . . . concede . . . that the magnitudes estimated by the model-builders are the ones which prevailed in the pre-war period and . . . rest their case upon the assumption that the magnitudes will automatically change in the right direction in the postwar period" (p. 42). The sense in which these magnitudes "prevailed" is a very queer one. True, in year-to-year changes during the 1929–1940 period, both savings and business profits changed by large percentages of changes in income. But the question posed by the model-builders is what would happen with activity continuously high—a situation which did not "prevail" at any time in 1929–1940. It is proper to infer from the time-series of these years (and from supplementary data in budget studies, etc.) that both savings and profits *may be* very much larger proportions of income at high than at low levels of national output; but the inference that they *will be* stretches the evidence beyond endurance.

Tax versus *Expenditure Adjustment*

Dr. Mosak is of course correct that "the choice between an additional reduction in taxation or an additional increase in government expenditures can obviously be made only in terms of their relative marginal social utilities" (p. 26). But his inferences rest on the assumption that the only kind of "utility" in question is the effect on employment. Now if full employment is attainable by tax cuts or by expenditures which do not directly absorb resources (*i.e.*, transfer payments), the social cost of "exhaustive" expenditures is consumption or private investment displaced. The common sense of public expenditures is to carry them to the margin at which they are of equal social value with alternative private expenditures of equal amount, irrespective of revenues; revenues and transfer payments (together with monetary policy) can then be used to keep the economy at full employment. To assume that unemployment is the alternative use for resources absorbed by "exhaustive" expenaitures is to be defeatist on full employment in a sense; for the assumption can hold only if there is no route to full employ-

[3] Dr. Mosak brushes aside the suggestion that he introduce some relevance into his data by adjusting for changes in prices and population. Failure to deflate is sometimes justified by the contention that either deflated or undeflated data will give much the same regression coefficient for savings upon disposable income for 1929–40. This is true. But it does not follow that no errors can be introduced by failure to deflate. On a deflated basis the apparent correlation of savings with disposable income is substantially lower; and there is next to no correlation between the residuals of the two regressions. It is no wonder, therefore, that Dr. Mosak's experiments with explanatory variables other than disposable income were inconclusive: the warping of the data by failure to deflate pushed the relevant evidence out of sight.

ment other than "exhaustive" government expenditures which are not justifiable on their merits.

Primary reliance on expenditure adjustment, while defeatist on the "stagnation" front, is over-optimistic on the fluctuations front. Except for transfer payments directly linked to business conditions (notably unemployment compensation), government outlays cannot be changed significantly on short notice. Good timing of changes in outlays thus rests entirely on very accurate forecasts ranging a year or more ahead. The revenue side is full of opportunities for "built-in flexibility"; and the currently collected personal tax can be changed quickly enough to reduce greatly the required span of forecasting. In fact, a mechanical rule by which taxes now will always be those which hindsight showed would have been appropriate three months ago is likely to prove fairly satisfactory; whereas a rule by which expenditures would be those which would have been appropriate a year earlier (about the best one could do by applying such a mechanical system to public works) would very probably make fluctuations worse.

In short, primary reliance on expenditure adjustment implies a *forestalling* policy toward fluctuations—with maximum reliance on forecasting and maximum prospect of amplifying errors. Primary reliance on revenue adjustment permits a *wait-and-see* policy of correcting observed fluctuations before they go far enough to do damage. The contention that reliance on revenue adjustment means somewhat larger public debt, which seems to be Dr. Mosak's chief argument, is second-magnitude relative to greater promptitude in dealing with fluctuations and better allocation of resources between government and private use; furthermore, the public debt argument discounts the favorable effect on investment of lower taxes and the unfavorable effect on investment of aggressive and unpredictable expansions of the sphere of government operations.

Dr. Mosak's Policy Findings

Dr. Mosak, as I read him, wants the reader to believe (a) that the models prove that adequate private investment at full employment to absorb full-employment savings is not even possible, let alone "automatic," and will be lacking not only intermittently but continuously; (b) that the policy upshot is an anti-stagnation policy rather than an anti-recession policy embodied in an anti-fluctuations policy; (c) that the resulting "national policy must be directed toward changing the income and expenditure patterns so as to increase private expenditures for consumption and tangible investment." This last seems to mean that the primary function of taxes is to discourage savings, and incidentally that wage policy can be used to squeeze savings *via* profits.

I differ at all three points. There is of course no use supposing that the economy will "automatically" stabilize itself indefinitely at full employment. Indeed, it is certain that at some time in the visible future we shall have to cope with powerful recessive forces. But it is highly probable (though admittedly not certain) that, if we have an effective anti-recession policy, we can maintain private investment most of the time at a level that will absorb at least the bulk of full-employment savings.

In the second place, Dr. Mosak's contrast between having a policy of ameliorating fluctuations and having a full-employment policy is artificial. If we can devise a policy for keeping recessions from pulling activity more than 5 or 10 per cent below full employment, then we have a full-employment policy.

In the third place, if tendencies toward deflation prove so persistent that full employment can be approximated only by continuous government efforts at stimulation, the answer does not necessarily lie in the direction of repressing savings. In fact, it is distinctly probable that to make the repression of savings a major goal of policy—which means surrounding business management with an atmosphere of hostility rather than of social approbation—will impair investment and embitter politics to such an extent as to make the task of full-employment policy harder rather than easier.

The line of policy which I understand Dr. Mosak to recommend is defeatist in that it takes for granted the persistent inadequacy of private investment and suggests in consequence policy measures which are apt to make investment desperately unattractive to business. If the savings-investment relations are, in fact, such that the economy will work without drastic reconstruction, Dr. Mosak's policy involves wasting the opportunity implied. On the other hand, the line of policy I recommend will not prove disastrous if Dr. Mosak's pessimism about savings-investment relationships is justified by the event. The onset of "stagnation" after the transition must necessarily take the form of a recession. If we are armed against recession, we can afford to test out the intensity and persistence of the deflationary forces before we resolve to make a radical shift in our economic organization.

The "Models" and Transition Policy

However skeptical Dr. Mosak may have been, many government economists about V-J Day were prepared to apply the post-war models to the transition; and the late lamented forecast of 8 million unemployed in early 1946 was so derived. Better statistical work might have led to better forecasts from the same general methods and data;[3] and certainly the early transition period was a time when errors of forecasting were excusable. This failure does not show models analysis to be useless; but it points directly at dangers in their interpretation.

The forecast of a sharp slump in incomes and the need of stimulative rather than repressive measures in the monetary-fiscal field served to rationalize[4] what seem by hindsight to have been serious errors of policy in

[3] I have in my files a memorandum from Mr. Lawrence Klein of the Cowles Commission, received a few weeks after V-J Day, in which he deduces from models analysis a substantial inflationary gap for the 12 months ending June, 1946.

[4] Note that I do not assert that economists brought about these policy measures. Most if not all would have been adopted had economists been unanimously opposed, and several were in fact opposed by most of the economists whose work is in question. But the prognosis of income deflation removed the basis both for effective opposition to these measures and for retrospective interpretation of the record which might have salvaged educational value from

an inflationary direction: notably (1) the policy of pushing at once for sharp wage increases; (2) the termination of the accrual of excess-profits tax liability with the end of 1945 rather than of 1946; (3) inaction on the monetary front instead of action to bring the supply of money under control and to stabilize (rather than push down) interest rates; (4) a false start on public works; (5) suspension of food rationing; (6) a false start on decontrol in the housing field; (7) promises of supplies to foreign countries which proved inconsistent with decontrol; (8) failure to prepare the ground for a final extension of the Office of Price Administration in effective form. Into the bargain, the attempt to dramatize the Murray bill by talk of heavy immediate unemployment, rather than by calling for prudence in forestalling more remote troubles, may have wasted much of the educational value of the attempt to mobilize public opinion in favor of the bill.

What disturbs me about the record is not so much that the forecast was wrong as that the policy derived from the forecast was one of staking everything on one throw rather than hedging bets. If the forecast had been correct, nothing would have been lost by a wait-and-see policy on most of these fronts. Excess-profits-tax repeal effective at the end of 1946 would have given a solid foundation for business estimates; had more stimulation proved necessary, the effective date could have been advanced to the end of 1945 by retrospective action as late as February or March, 1946. Calling for adequate monetary powers would not have compelled their immediate use. Maintaining rationing and housing controls would not have prevented as much easing up as the objective facts (relative to the forecast of a slump in income) would have justified. In short, a line of policy could readily have been found which would have worked out almost as well as the policy adopted in the event that there was a serious transition slump and much better in the sort of situation which actually ensued. This experience and Dr. Mosak's article both suggest a discouraging lack of willingness among the economists whose work is under discussion to consider at what points and to what degree their forecasts are liable to error, and to look for policies which will work reasonably well even though some forecasts are erroneous. It is hard enough to persuade the layman that the economist has any special competence, without pretending that we have infallible answers where we obviously cannot have them.

ALBERT GAILORD HART*

* Visiting professor of economics, Columbia University, and research economist, Committee for Economic Development. Perhaps I should put unusual stress on the fact that I am expressing individual views rather than speaking for the Committee or its research staff, in view of Dr. Mosak's flattering attribution to me of the authorship of *Jobs and Markets*. While I am as fully prepared to accept responsibility for statements in that report (which embodies the unanimous findings of the six members of the CED staff who were its authors) as for any of my own writings, it does not follow that I am in any sense a spokesman for the organization.

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our experience. The doctrine of the "mixed situation," with deflation in general but a few tight spots, was not an adequate hedge; in fact, it invited the policy of reducing O.P.A. to operation in a very few fields.

National Budgets and National Policy: A Final Reply

In view of the earlier extended discussion I think it desirable to present as briefly as possible my coments on Dr. Hart's rejoinder. To facilitate references I shall adopt both his order of topics and his headings.

A. *Facts and Analysis*

1. Of course, an hypothesis cannot be "proved" by statistics, but can only be tested for consistency with the data. This is a basic proposition in elementary statistics and elementary logic, and I know of no occasion in which I have denied it.

2. The comments on my use of undeflated figures for the consumption function are a bit off the main track. Dr. Hart's original paper did not even contain a reference to this point, because it treated the model-builders as representing a common school of thought and attempted to deal only with those shortcomings which they were thought to have in common. Since the other model-builders had used deflated figures and had obtained results essentially similar to mine, this defect, if it be one, obviously could not be attributed to any "school."

As I have pointed out twice already, the conclusions derived from the models do not in any way depend upon the use of undeflated data. Smithies used deflated data and obtained an even lower estimate of the marginal propensity to consume than I did. Had I been interested in the consumption function *per se*, I might have used the deflated figures. Since my interest was only in the broader problem of the post-war prospects for full employment, I presented the simple money relationship as a first approximation when I saw that it did not significantly affect the conclusions with respect to the broader problem.

B. *Alleged Concessions*

1. As I pointed out in my previous paper, it is true, of course, that the pre-war relationships do not show the conditions that might prevail if the threat of unemployment were eliminated once and for all from our society. A society which does not have to worry about mass unemployment, about insecurity in old age, about risk of general business depression, might gradually establish much more favorable spending patterns and much more favorable price-wage relationships. The problem of maintaining full employment might, therefore, become smaller as the years go on. This does not mean, however, that the problem of establishing full employment and maintaining it in the first years after the present inflationary period will be an easy one.

2. Since the physical scientist would not even assert that the sun *will* rise tomorrow, but only that it is extremely likely that it will, the model-builders certainly would not maintain that savings and profits *will be* a larger proportion of income at high than at low levels of income. Their position is simply that, on the basis of the pre-war data, it is more reasonable to assume that they will than that they will not be. One takes along an umbrella not only when he *knows* but also when he *believes it likely* that it will rain.

C. *Tax* vs. *Expenditure Adjustments*

1. Despite the fact that Keynesians have been in the forefront in the fight for such measures as an expanded social security system, reduced interest rates, and reductions in excise and other taxes bearing on the low-income groups, and despite the vast Keynesian literature on the subject, Hart persists in his notion that Keynesians believe only government expenditures can increase employment.

In my last paper I made it clear that Hart was simply wrestling with straw men. That did not, however, end the sport. After quoting and approving my statement that both government expenditures and tax reductions will increase employment and that the choice between them depends on their relative marginal social utilities, he turns right around and states that we assume there is no route to full employment without government expenditures. Indeed he now interprets such government expenditures to exclude transfer payments and implies we favor government expenditures on goods and services which are not justifiable on their merits.

The following statements are made to avoid the possibility of further misinterpretation:

a. In an unemployment situation, *any* measure which tends to increase either private consumer expenditures or private investment or government expenditures on goods and services more than it tends to decrease them contributes to an increase of employment. This includes, among others, tax reductions, government transfer payments, and exhaustive government expenditures whether or not they are justifiable on their merits.

b. The choice between different measures for achieving full employment can be made only in terms of their relative marginal social utilities.

c. Much opinion to the contrary (Hart's apparently included) notwithstanding, Keynesians are not in favor of government expenditures, exhaustive or otherwise, which are not justifiable on their merits. There is no shortage of alternative measures which are justifiable.

2. Hart makes an important contribution to policy in emphasizing the need to consider the speed with which any program can be adjusted to meet changing conditions. So far as I know, no model-builder stated his position on the question whether government revenues or government expenditures can be more speedily adjusted. For myself, I am not nearly so certain as is Hart that only the revenue side provides opportunities for "built-in flexibility." To take but one example, I wonder if he is not discounting too heavily the degree of "built-in flexibility" involved in the proposal of Dr. E. A. Goldenweiser that the government put on its payroll any man who loses his job in private industry.

D. *Policy Finding*

1. The model-builders do not believe and have never stated that adequate private investment to absorb full employment savings is *always* impossible. Their position is that, with low federal expenditures, private investment is likely to be inadequate to maintain full employment *on the average* over a period of years. In some individual years, of course, it may be not only

adequate but even excessive. The question at issue is simply whether in the absence of a national policy, business fluctuations would take place around a trend of full employment or one of substantially less than full employment.[1]

2. The term "anti-stagnation policy" may be open to misinterpretation. Stagnation is probably associated in many minds with a falling, or at best a constant, volume of output. Even in the absence of a national full-employment policy, however, post-war output will probably be considerably above pre-war levels and will probably have a rising trend. In a sense we did not "stagnate" even in 1940 as compared to 1929, since output and productivity were substantially higher in 1940. We did, however, suffer from an enormous waste of human resources and potential output.

What we need for the post-war period is not an anti-stagnation policy but a full-employment policy. And I do not agree that we have a full-employment policy if we keep recessions from pulling activity 10 per cent below full employment. Six million unemployed does not represent full employment.

The difference between ironing out a cycle about a level of full employment and eliminating the danger of long-lasting periods of unemployment is not as artificial as Hart would now make it appear. In the first case we are likely to feel that the solution lies in some such simple formula as "built-in flexibility" of taxes. In the second case, however, we shall concern ourselves primarily with such measures as a greatly expanded program of social security and provision for adequate housing, adequate hospital care and adequate education. We shall support more Tennessee Valley Authorities, slum clearance, and urban redevelopment. If Hart favors such programs then we are in agreement. If, however, he opposes such programs on the grounds that they "are not justifiable on their merits," or "repress savings," or "mean surrounding business management with an air of hostility," or "are defeatist on full employment," then we are in disagreement.

3. The belief that repression of savings is a major goal of Keynesian policy is another sterotype which it would be well to eliminate in the interest of clarity. The goal is an increase in consumption and investment adequate to maintain full employment, not repression of savings. If incomes are increased, consumption will rise without a repression of savings; in fact, savings will rise at the same time. It may be necessary to reduce the *proportion* of the gross national product that is saved. It does not follow, however, that the *aggregate* volume of savings will necessarily be lower.

E. *The Models and Transition Policy*

This is not the time or place to enter into a detailed discussion of the transition period forecasts. As I pointed out in my previous paper, the models

[1] Incidentally, Hart has now apparently so hedged his own position on the long-run outlook as to make it almost impossible for the model-builders in question to disagree with him. Thus he writes: "But it is highly probable (though admittedly not certain) that if we have an effective anti-recession policy we can maintain private investment most of the time at a level that will absorb at least the bulk of full-employment savings." If this means (a) that most of the time it will not absorb the difference between all and the bulk of full-employment savings, and (b) that the rest of the time it will not absorb even the bulk, then I think Hart should support the model-builders rather than oppose them.

which Hart criticized were explicitly confined to the post-transition period.

The transition forecasts were indeed seriously in error. It is important to emphasize, however, that these forecasts were based not on the post-war models as such but on an important modification of them. The post-war models yield estimates of *total* consumer expenditures at varying levels of disposable income when all goods and services are freely available. In making the transition forecasts, however, account had to be taken of the many shortages, particularly in durable goods and services. On the basis of the wartime experience alone, it was assumed that consumer expenditures would not spill over into goods that were available, and it was estimated that *consumer expenditures would be below normal post-war expectations to the extent that there were shortages.*[2]

This did not happen. Instead, consumer expenditures on non-durable goods rose very sharply after V-J Day, yielding, despite the shortages, a total volume of consumer expenditures about equal to what would be expected from the post-transition models. It is this increase in consumer expenditures on non-durables which is primarily responsible for sustaining the high levels of gross national product and of employment.[3]

It is still too early to determine whether this increase in consumer expenditures on non-durables is a temporary transition-period phenomenon or a relatively permanent one. If it is permanent, it will make a very great contribution toward solving the problem of post-war unemployment. If, on the other hand, it is essentially a temporary phenomenon, attributable to such factors as (a) the influx of veterans, (b) the volume of capital gains (both realized and unrealized) resulting from the increase in stock market prices and in real estate values, (c) the shortages of durable goods, (d) the elimination of wartime restraints on consumption, and (e) anticipations of price in-

[2] Some upward adjustments were made in the expenditures on non-durables to allow for the effects of returning veterans, the volume of cash balances, and the general relaxation from wartime conditions. These allowances, however, were quite small relative to the downward adjustment for shortages discussed in the text.

[3] Several other factors contributed to the difference between the actual results and the projections.

a. The projections were explicitly based on the assumption of no increase in wage rates above wartime levels, whereas wage rates were increased substantially and, of course, contributed to an increase in both disposable income and consumer expenditures. This factor represents not an error in forecasting but a difference in policy assumption.

b. There was a very strong lag between the decline in production and the decline in employment in factories experiencing cutbacks of war production. In large part this was attributable to the fact that the excess profits tax was repealed shortly after V-J Day, effective as of January, 1946. This action encouraged producers to concentrate as much of their expenditures as possible during the period when the excess profits tax was still in effect and to keep their labor force relatively intact. Aside from the effect on labor income it probably had a very powerful psychological effect in sustaining consumer expenditures.

c. Private capital formation, particularly construction, was underestimated. This error was more than offset, however, by the overestimate of federal expenditures. The fact that construction was higher than was estimated is attributable, among other things, to the government construction program and to the sharp rise in construction costs, both of which were not assumed in the estimate.

creases, then the problem of sustaining post-war full employment after this inflationary period will remain quite great.

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* The views expressed in this note are the author's own personal opinion and do not necessarily reflect those of the Office of Economic Stabilization.

I wish to thank Mr. Alfred Sherrard for his helpful suggestions.

The Maintenance of Full Employment after the Transition Period: Notes on Mr. Kalecki's Models

"... the solution of the problem of employment after the transition will require a much more unorthodox policy in public finance in the United States than in the United Kingdom.

"... it is true that the budget deficit necessary for the maintenance of full employment in the United States may be diminished by a variety of factors.... But it seems unlikely that all these factors would enable the United States to maintain full employment after the transition period without a substantial budget deficit...."

This is the gist of Mr. Kalecki's article on "The Maintenance of Full Employment after the Transition Period," which appeared recently in the official organ of the International Labour Office.[1] More specifically, the article suggests that full employment in the United States in 1950 presumes a budget deficit of 13 billion dollars and an export surplus of 2 billion dollars[2] or some other combination of deficit spending and export surplus totaling 15 billion dollars. Although the arguments of the article are not more original than its conclusions, it deserves attention for three reasons: first, because it appears under the sponsorship of an influential international organization; second, because it is typical of an economic school that was fairly influential in Washington until its forecasts were exposed to the test of checking with facts; third, because it appeared after this embarrassing test had been completed.

The reasoning of the article rests on the well-known observation that the net national income may be represented in two ways: either as a sum of personal consumption, public expenditure for goods and services, net private investment, and export surplus; or as a sum of personal consumption, taxes available for public expenditure for goods and services, and savings. Subtracting private consumption and taxes from both aggregates, one finds that, apart from minor adjustment factors, savings (S) must equal the sum of net private investment (I), export surplus (E), and budget deficit(D).

From the tautological formula ($S=I+E+D$) other equations showing the relationship between the same four items may be deduced, all equally tautological and none providing any insight into the mysteries of the modern economy. If, however, these harmless formulas are combined with definite assumptions concerning economic trends, they take on a prophetic

[1] *International Labour Review*, November, 1945, pp. 449–64.

[2] *Ibid.*, p. 460.

quality. Assuming, for example, a balanced government budget, a rising export surplus would presume a widening gap between savings and private investment and forecast an increase in savings, or a decline in private investment, or both. Assuming a balanced foreign trade and a constant rate of investment, one would predict that savings would rise or fall with the budget deficit. Of the several dozen formulas of this kind, one has become especially popular in recent years: ($S-I=D+E$), the sum of budget deficit and export surplus equals the difference between savings and net private investment. The success of this formula is based on the implicit postulate that in the modern economy the amount of savings (S) tends to outrun investment (I) and that the widening gap between the two items ($S-I$) condemns the economic system to deflationary contraction, unless special measures are taken to check this danger. If this postulate were correct, the conclusion would be inescapable: To prevent mass unemployment, the gap ($S-I$) should be bridged by deficit spending by the government (D) or export surplus (E), or both ($D+E$). The crucial question is whether the postulate *is* correct.

Mr. Kalecki displays a series of "models" of distribution of the national product. First, he shows comparative pre-war models for the United States (1940) and the United Kingdom (1938). In these models the United States, with a net national product of 87.8 billion dollars, has an export surplus of 1.5 billions and a budget deficit of 1.5 billions, while the United Kingdom, with a net product of £5.2 billion, reports an export surplus of £70 million and a budget deficit of £220 million. The sum of both items amounts to 4 per cent of the net national product for the United States and to 3.4 per cent for the United Kingdom. Although this trivial disparity falls within the margin of error of the two computations, Mr. Kalecki considers it sufficient to justify a far-reaching conclusion: "The main difference in the structure of the national product in the United States and the United Kingdom is seen to be the higher percentage of income saved in the former country at the same level of employment. . . . The problem of employment is more difficult in the United States than in the United Kingdom because the percentage of income saved at the same degree of employment of the available labour force is substantially higher; and because this percentage is not normally offset by a correspondingly higher ratio of private investment plus export surplus to incomes."[3]

Obviously one can neither accept nor reject these conclusions on the basis of such insubstantial evidence as two sets of not strictly comparable figures, without any analysis of the economic structure of the two countries and business conditions in the selected years. This is, however, characteristic of the article: it draws far-reaching conclusions from casual, irrelevant figures.

This characteristic becomes still more pronounced in the second part of the article, which shows the hypothetical post-war patterns ofdistribution of the national product in the two countries, on the assumed full-employment level. The model for the United States in 1950 suggests a net national

[3] *Ibid.*, p. 457.

product of 178 billions at 1943 prices, personal consumption of 127 billions, and taxes of 26 billions. The balance of 25 billions represents savings and is offset by the aggregate of net private investment (10 billions), export surplus (2 billions) and budget deficit (13 billions). On the other hand, the model for the United Kingdom in 1951 shows only a small budget deficit (£150 million), due essentially to public outlays for residential building.

One will recognize that the sweeping conclusions quoted above are inescapable if these "models" are correct. In fact, the conclusions are hidden in the models, like a white rabbit in the hat of a magician. Therefore, Mr. Kalecki should have proved that the people in the United States will put aside 25 billion dollars in 1950 while the nation needs only 10 billions for net investment. Instead of any proof he refers simply to an earlier article of Mr. Arthur Smithies on "Forecasting Post-War Demand," an essentially mathematical article in which general methodological considerations were illustrated by a series of tentative, deliberately experimental projections.[4] Whether valid or not,[5] these projections reflected a definite phase of the discussion which was in progress at that time among technicians in the United States but were not intended to serve as a prophecy. In Mr. Kalecki, however, these casual figures become a prediction of the economic structure of post-war America and the foundation—the sole foundation—of the policy it should follow to maintain full employment!

Let us examine the assumption of an over-saving of 15 billion dollars in post-war America. History shows that, except during wars and deep depressions, savings in the United States averaged somewhat less than 10 per cent of the national income and were roughly in balance with its demand for new capital. If this pattern should change drastically in post-war America, there must be some reasons for such a change. What are these reasons? Will veterans returning home from foxholes lose their "propensity" for decent dwellings, and will building construction stop? Will the nation shift to the austere consumption habits of the eighteenth century? Will people move from cities to rural areas, strongholds of thriftiness and saving? Will technical progress be brought to a standstill?

None of these assumptions seems very probable. Observations point rather to very different trends. New, higher consumption habits were acquired by workers during the war boom. New habits were brought back to the country by returning veterans. The tide of marriages and births resulted in an unprecedented demand for new homes, a demand which cannot be satisfied in three or five years. The deferred demand for durable goods and accumulation of war savings open new markets for production. The new technology of light metals and plastics and the progress of electronics generate new outlets for investment. The progress of aviation makes urgent the task of adjusting our urban areas to the new means of transportation. The huge financial reserves of business concerns, farmers, and public

[4] *Econometrica*, January, 1945.

[5] For a criticism of Mr. Smithies' regression formula, see W. S. Woytinsky, "Relationship between Consumers' Expenditures, Savings, and Disposable Income," *Rev. Econ. Stat.*, February, 1946.

agencies make private construction and public works possible on a scale never dreamed of before. The United States has emerged from the war as the first economic power in the world. The state of international security demands considerable outlays for defense. The nation is facing a tremendous expansion of individual and collective consumption and spending.

On the basis of a similar appraisal of the prevailing trends in our economy, I have ventured in another article[6] to make a tentative projection of the distribution of a Gross National Product of 150 billion dollars, at 1941 prices, in 1950 on the full-employment level. In this projection I have estimated current savings of individuals in 1950 at 9.9 billions and those of corporate business (undistributed profit) at 2.3 billions. At the same time, I assumed that 4 billions of war savings will flow back into consumption, leaving a net saving of 8.2 billions. If net investments in 1950 are estimated conservatively at 10 billions,[7] this amount of net savings will be 1.8 billions short of the demand for new capital, the total demand for consumer and capital goods will exceed the current output, and the general economic condition in the United States will be inflationary rather than deflationary.

Here are two widely divergent patterns of economic life in post-war America. Which is more realistic? Which forces will dominate the economic scene after the war—those of deflationary contraction or those of inflationary expansion?

A similar controversy on the course of reconversion has been solved by experience. The progress of the reconversion has revealed how unwarranted were all the predictions that a deflationary spiral and mass unemployment would follow the cessation of military expenditures. This does not, of course, exclude the possibility that predictions of deflationary gap after the reconversion may be right. The point to be stressed here is that the controversy in interpreting historical trends cannot be solved by tricky "models" which postulate in advance a definite pattern of development. If we know what our economy will be in 1950, we can easily represent it by a "model"; but as long as the future is uncertain, the "models" based on casual or biased postulates serve no other purpose but to perpetuate superstitions and disseminate false notions.

In fact, the difficulty of developing economic projections for post-war America or any other country is not in picking up a set of figures totalling the anticipated national output, but rather in appraising the long-range repercussions of the war. Was this war only a temporary deviation from the secular trend as manifested in economic conditions in the 1930's? Or will it become the starting point of a new economic cycle analogous to that launched by World War I? In other words, do we reconvert to an economic phase similar to that of 1920, or analogous to that of 1940?

The means useful for maintaining full employment in post-war America will be determined by the post-war economic conditions. If the United States

[6] "Postwar Economic Perspectives III, Prewar Experience: Production and Consumption," *Social Security Bulletin*, February, 1946, p. 14.

[7] In my projection, the "business share" in the Gross National Product is set at 19 billion dollars, including 9 billions for business reserves, depreciation charges, and the like. This leaves 10 billions for net investment.

is returning to the "normalcy" of 1940, prophets of deficit spending may prove to be right. If the nation is entering a long era of post-war expansion with periodically recurring set-backs in business conditions, it will need a different, much more flexible economic policy. The practical task will be, in this event, to find the proper selection, timing, and dosage of remedies designed to correct excessive up's and down's in employment. The danger will be in overdoing the treatment of the actual ailment as it has been overdone too often in the past. Using the words of Keynes, it is "as though the family were to go on giving a child successive doses of castor-oil every ten minutes until the first dose had done its work. Or—to take a better parallel—it is as though different members of the family were to give successive doses to the child, each in ignorance of the doses given by the others. The child will be very ill. Bismuth will then be administered on the same principle. Scientists will announce that children are subject to a diarrhoea-constipation cycle, due, they will add, to the weather, or, failing that, to alternations of optimism and pessimism amongst the members of the family. If the time taken by the first dose to act is constant, they will discover that the cycle is a true one with a constant period. Perhaps they will suggest that the remedy is to be found in giving the child bismuth when it is constipated and castor-oil at the other extreme. But more probably the parents will divide into bismuth and castor-oil parties, one of which, impressed by the horrors of diarrhoea, will renounce castor-oil, and the other, moved by the depression of constipation, will abjure bismuth."[8]

Disregarding these wise warnings of Keynes, his followers propose to cure all the evils with one medicine—the castor-oil of liberal compensatory spending. Since they have no other prescription in their books and no other medicine in their bag and know in advance what they are going to administer to the patient, they do not need to waste time in examining him, observing the symptoms of his ailment, or studying his constitution, disposition, and environment. The procedure is simple: Get the patient to open his mouth wide and make him swallow as much of the salutary medicine as can be forced into him. This is the economic philosophy of the article under discussion. That the post-war United States will be economically ill and in need of a good dose is taken for granted. The only problem is how to make the prospective patient open his mouth wide enough to absorb 15 billion dollars a year. The article performs this operation with commendable fervor and courage, and with no false pretense of having based the remedy on a study of actual conditions and trends in post-war America.

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Correlations and Forecasting

The passage of the Full Employment act has transformed model-building and forecasting into a public function. Economists' suggestions will doubtless receive a good deal more attention, favorable and otherwise. Perhaps

[8] J. M. Keynes, *A Treatise on Money; The Applied Theory of Money* (London, 1930), Volume II, pp. 223–24.

the most ambitious discussion of forecasting has appeared in this *Review*[1] and some of its findings have been cited in the well-known symposium on *Financing American Prosperity*.[2] Unfortunately, it contains serious errors.

1. Although the discussion is entirely in terms of quarterly changes, the quarterly "predicted" gross national product is never shown; even the annual "predicted" gross national product appears only on a small-scale chart. Picking off some values here as best we can, it appears that for 1923, 1934, 1935, and 1938, "predicted" and actual changes from the previous year were respectively about 27 and 17 per cent; 31 and 16 per cent; -5 and $+10$ per cent; $+3$ and -8 per cent. These are sizeable errors and involve four years out of nineteen. Moreover, since comparison of annual data removes three-fourths of the opportunities for differences between "predicted" and actual; since both are in terms of current dollars and alike affected by the great price movements since 1921; and since secular trend is the same,[3] much of what correlation does exist is, on the face of it, simply spurious.

2. Of the two independent variables, the more important (by 50 per cent) is a quarterly profits series of which "the third quarter of the previous year [was] weighted once; fourth quarter weighted three times"(p. 74). When planning operations, that is, for a certain quarter Q_3 business men will be influenced by the record of profits realized in Q_2 three times as strongly as by the record of Q_1; they will not be influenced by anything else. In the business world, however, the record of Q_2 will not be available until Q_3 is well under way. (The statistician would begin to "forecast" Q_3 when he was in Q_4!) Physically, therefore, the hypothesis is at least half untrue. Moreover, the original data show profits failing to lead GNP either in 1929 or 1938.[4]

3. The naïveté of treating "profits" as a unitary phenomenon is astonishing; the aggregate or average of profits is a summary expression for many separate and often divergent influences.[5] Dispersion among industries[6]

[1] Stanley Lebergott, "Forecasting the National Product," *Am. Econ. Rev.*, Vol. XXXV, No. 1 (March, 1945), pp. 59–80.

[2] P. T. Homan and F. Machlup, editors (New York, Twentieth Century Fund, 1945), p. 417n.

[3] Tinbergen's model is supposedly being followed here, but the use of a least-squares trend, and deviations therefrom, "was felt to be undesirable in the present instance" (p. 73). No further explanation is offered.

[4] Harold Barger, *Outlay and Income in the United States* (1942), p. 136.

[5] Raymond T. Bowman, *A Statistical Study of Profits* (1934), especially pp. 136, 139; 141, where it is demonstrated that even concentration around the mean does not make it representative in this instance.

[6] Ralph C. Epstein (asst. Florence M. Clark), *Industrial Profits in the United States* (1934): "Actual profit rate in different industries manifest little tendency to become equal" (p. 579); "differences exceeding 100 per cent between the *average* profit rates earned by considerable groups of corporations" persist "over a full decade" (p. 587). Moreover "general averages at best give only a notion of the 'general drift' and the 'general drift' of all industries averaged together may in some respects be not the drift of the most important industries at all" (p. 589). In any attempt at public regulation or control, "no general average figures will suffice" (p. 588).

is as wide and persistent as among size-groups,[7] and "differences in [cyclical] timing " appear among both.[8] Most simply: if the several members of a crowd push in various directions, the crowd as a whole is not exerting any decisive pressure in any one direction. Quarterly changes[9] in a profits *average* are of such doubtful meaning that even a "significant" correlation tells us little except that they tend to vary directly with business activity—which is plausible but not exactly novel.

4. Even in the individual firm, where no averaging problems are involved, profit is anything but definite. The Treasury's calculation differs from the corporation's.[10] It is an axiom among accountants that income is a matter of judgment;[11] that even if determinate it cannot be exactly allocated to the appropriate short period.[12] Furthermore, windfall (capital) gains and losses, properly chargeable to surplus, must be eliminated from the income account if it is to reflect the normal operations of the business and furnish a clue to the future; yet corporate practice, in this respect, approaches chaos.[13] The depreciation charge "rarely has any actual relationship to any actual wear and tear . . . [and is] more often concerned with tax considerations than with actual facts. . . . Practically all depreciation charges have been excessive."[14] High or low, the arbitrariness of the charges intro-

[7] William Leonard Crum, *Corporate Size and Earning Power* (1939).

[8] *Ibid.*, p. 161. Barger, *op. cit.*, pp. 136 and 146, points out that during the depression there were "marked contrasts" among various industry trends; at the "turning point in 1932–33, there appears to be considerable dispersion."

[9] Apparently (it is difficult to make sense of the explanation) no seasonal adjustment was made for years after 1938, although Barger, in making estimates for 1922–38, did find it necessary to make them.

[10] See J. Franklin Ebersole, Susan S. Burr, and George M. Peterson, "Income Forecasting by the Use of Statistics of Income Data," *Rev. Econ. Stat.* (November, 1929): "The *statistics* of *income* are merely . . . data collected incidentally in assessing . . . federal taxes. . . . The first consideration has been revenue, and consequently the proper requirements . . . for tabulating significant data have frequently been sacrificed" (p. 171). "For 104 industrial corporations . . . the total net income shown in returns with the same names was 90.2, 87.3, 85.9, and 90.0 per cent, respectively, of the total published profits for the years 1923–1926" (p. 178 n2). The tabulation and classification procedures of the Bureau of Internal Revenue have improved very greatly since then, but the basic qualifications remain. The spread between published and taxable income is probably greater and more erratic today.

[11] For example, Accounting Research Bulletin No. 13, of the American Institute of Accountants, as printed in the *Journal of Accountancy* (February, 1942), pp. 155*f.*: "While many items in financial statements are determinable with substantial accuracy, others involve estimate or approximation and require the exercise of informed judgments within a comparatively wide range of reasonableness. There is increasing recognition of the fact that the significance of periodic financial statements is limited accordingly." For a sample study of discrepancies, see Howard C. Greer, "What Are Accepted Principles of Accounting?" *Accounting Rev.* (March, 1938), pp. 27–28.

[12] Witness the present discussion in the accounting journals concerning allocation of war and reconversion costs.

[13] William W. Werntz (chief accountant, S. E. C.), "Trends in Accounting," *Jour. Accountancy* (January, 1946), pp. 36, 37. See also Norman S. Buchanan, "Toward a Theory of Fluctuations in Business Profits," *Am. Econ. Rev.*, Vol. XXXI, No. 3 (Sept., 1941), p. 751.

[14] Harry E. Howell, "Postwar Pricing and Cost Accounting," *NACA Bulletin* (November

duces the same element into the income statement. The same is true, *mutatis mutandis*, of inventory valuation; "fifo" *vs.* "lifo" is an unresolved issue in practice and theory,[15] and even the venerable "lower of cost or market" is questioned.[16] By no means least important is the element of user cost, which "cannot be read off a cost accounts sheet. . . . Quantitatively vague and imprecise, [it] is definitely present in the entrepreneural mind."[17] The point need not be labored further: it is clear that the the profit of any given firm in any given period is no uniquely determined amount, or even an approximation thereto. The host of qualifications and interpretations in the minds of those most closely concerned convert the "profit" into a rather nebulous thing that has no necessary resemblance to the precise-looking figure on the income statement. The easy assumption of mutual cancellation of errors is unsatisfactory; a little reflection shows that the elements of "judgment" are far more likely to point all in the same direction.

5. Government expenditures on durables and on "all other" are separately plotted against GNP; "the values of the regression coefficients then indicated the relative weights to be assigned to each" (p. 75). The weights are not revealed. The division is completely arbitrary; there is no reason to regard purchase of durables as (more? less?) potent than any other sort of purchase;[18] the data are simply being rigged to look better. The profits series is weighted 1.5 times the total of government expenditures, which may be analytically justified or not; apparently there was no need felt for such analysis.

6. The basis for all the statistical manipulation is a dynamical model akin to that of Tinbergen.[19] Payments to individuals (which, let us note, are part of GNP) determine consumer expenditures (p. 69); the latter, like investment, is a "dependent function" (p. 70). "We may infer profits fairly well from consumption alone. . . . But given a value for profits, we can immediately infer a value for future levels of employment, payroll disbursements, and also for gross product" (p. 70). The terms in the estimating equations are all positive. Accordingly, an increase [decrease] in GNP will be followed by an increase [decrease] in consumption, will be followed by an increase [decrease] in profits, will be followed by an increase [decrease] in

15, 1945). Lewis Kimmel, *Depreciation Policy and Postwar Expansion* (1946), pp. 24–26, agrees as to the indeterminacy of the depreciation charges but would maintain, I think, that they tend to be too low rather than too high.

[15] For a recent statement of the controversy, see K. Lacey in *Economica* (February, 1944); and Harry Norris, *Economica*, (August, 1945).

[16] See George R. Husband, in the *Accounting Review* (April, 1946).

[17] P. T. Bauer, "Notes on Cost," *Economica* (May, 1945). Bauer presents not only a lucid summary of the theory, but an illuminating application to the Malayan rubber industry.

[18] Paul A. Samuelson, "Fiscal Policy and Income Determination," *Quart. Jour. Econ.* (August, 1942), pp. 599–600.

[19] As a matter of fact, the model is very similar to Tinbergen's "example II, [which] only contains a theory of the cumulative process," and not "a theory of the cycle. . . . It cannot explain a turning point." Jan Tinbergen, "Econometric Business Cycle Research," *Rev. Econ. Stud.* (February, 1940), pp. 84, 85.

GNP, and so on indefinitely. The circle is complete; it is impossible for any reversal ever to take place. The national product either rises continuously or falls continuously; it never fluctuates. Comment on this theory would be superfluous.[20]

7. Past profits, dimly and belatedly revealed, may condition the state of business confidence, but their influence on expectations of future profits is swamped by that of very palpable changes in costs, prices, and sales. Economists of widely divergent opinions have pointed to increases in factor prices, resulting in sharply disappointed profit-expectations, as the proximate cause of the downturn.[21] An explanation of unexpected decreases in sales would be an explanation of the business cycle. The traditional division of goods as durable or perishable, producers' or consumers', etc., and the rich discussion over the acceleration principle, stem from the search for those industries which initiate, or at least foreshadow, general movements through changes in their demand for the products of other industries.[22]

8. Not past average rates of profit, but expected marginal rates, will direct new investment. Maximized revenue is not an inducement to expand. In effectively monopolized markets, the entrenched happy few will guess at their demand curves and stand pat.[23] Investment sufficient to offset saving will not necessarily be made even when profits, as a principal source of savings, are very high. This hardly promises prosperity.

9. A single "horrible example" does not discredit econometric methods in general. But it does serve as a useful reminder that economic research is not—altogether—a matter of manipulating numbers and drawing lines on

[20] Writing 29 years ago, J. M. Clark said of Wesley Mitchell's *Business Cycles* (1913) that it "rendered obsolete all attempts to explain crises in terms of any one fact or any one narrow chain of causes and effects."

[21] For general discussions, see Wesley C. Mitchell, *Business Cycles and Unemployment* (1923), pp. 11-14; and *Business Cycles* (1927), pp. 106–07; Gottfried von Haberler, *Prosperity and Depression* (1940), pp. 106–10, 353–54, 456–61; Maurice Dobb, *Political Economy and Capitalism* (1937), pp. 102–04; Friedrich A. Hayek, "Price Expectations, Monetary Disturbances and Malinvestments," in *Readings in Business Cycle Theory* (1944), p. 360.

Also Sumner H. Slichter, "The Downturn of 1937," *Rev. Econ. Stat.* (August, 1938): "The downturn occurred while profits were still rising. In other words, business men reduced their estimates of profits on new commitments while profits on old commitments were growing. Obviously, it is the expected profits on new commitments which are decisive in determining business activity" (p. 108).

[22] J. M. Clark, *Strategic Factors in Business Cycles* (1934). See pp. 91–92 and p. 188, par. (3) for a discussion of profits as dependent on divergent cost and price movements during a boom.

[23] See Norman S. Buchanan, "Anticipations and Industrial Investment Decisions," *Am. Econ. Rev.*, Vol. XXXII, No. 1 (March, 1942), suppl., p. 154. Buchanan shows that the more fully competitive the market, and the easier the estimation of additional gross income, the more incentive will there be to buy expense-reducing equipment. See also TNEC Monograph No. 12, "Profits, Productive Activities, and New Investment," by Martin Taitel, p. xix: "Factors other than the amount or the rate of profit have been the major determinants of the level of capital expenditures of groups of companies in the same industry, and, hence, of business as a whole. Of these other factors, the most important have been the level of output in relation to capacity and the pressure upon business for the introduction of available new technologies."

paper. Some attention to the real world is helpful—perhaps even essential. And the manipulation ought not to flout the elementary rules of logic.

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Recent Activities of Soviet Economists

During the years of World War II, Soviet economists, like their colleagues in the United States and Great Britain, concentrated the great bulk of their energies upon problems connected with different aspects of the war effort. This activity encompassed not only all aspects of the internal economy of the U.S.S.R., but was also directed at understanding developments in the economies of all major foreign nations, with some particular stress in the last two years upon efforts being made to secure international cooperation in various economic fields such as finance, trade, agriculture, labor, etc.[1]

During the past two years, Soviet economists concentrating upon problems of the internal development of the U.S.S.R. have been engaged primarily in planning the restoration of devastated areas in the Soviet Union and charting the future economic development of their country. Much of this work has been done by personnel of Gosplan (the State Planning Commission) and the Institut Ekonomiki (Institute of Economics of the Academy of Science of the U.S.S.R.), as well as by economists attached to various other governmental organs. The most important results of this activity were embodied in the Fourth Five Year Plan adopted by the Supreme Soviet of the U.S.S.R. in March, 1946.[2] Considerable research and planning have apparently also been done on the longer range economic development of the U.S.S.R.[3]

Soviet economists concentrating upon the study of foreign economies and of international economic trends have served their country in the military governments which have been set up for the areas occupied by the Red Army; in the negotiation of trade agreements with Rumania, Poland, Finland, Argentina, Iceland, Bulgaria, and other countries; as advisers to Mr. Molotov in the meetings of the Foreign Ministers of the leading powers among the United Nations; and as representatives of or observers for the U.S.S.R. at the meetings of various international organizations such as U.N.R.R.A., F.A.O., the International Bank and Fund, etc.

[1] This paragraph is based upon a number of conversations engaged in by the author with Soviet economic personnel he met in Berlin during the summer of 1945. *Cf.* also Akademiya Nauk Soyuza SSR, *Referaty Nauchno-Issledovatelskikh Rabot za 1944 g. Otdeleniye Ekonomiki i Prava* (Papers on Scientific Investigations in 1944, Division of Economics and Law) (Moscow, 1945), pp. 3 and 4; and "Raboty Instituta v Gody Voiny" (Work of the Institute in the War Years), *Mirovoye Khozyaistvo i Mirovaya Politika* (World Economics and World Politics), No. 12 (Dec., 1945), pp. 82–86.

[2] The complete Russian text of the Fourth Five Year Plan has appeared in, among other places, *Pravda* and *Izvestiya*, March 21, 1946; and *Bolshevik*, March, 1946. An English translation was serialized in the *Moscow Daily News*, March 23, 27 and 30, 1946, and has been published in pamphlet form by the Soviet Embassy in Washington.

[3] *Cf.* the goals for 1960 mentioned in Stalin's speech of February 9, 1946, *New York Times*, February 10, 1946.

While the reports prepared by Soviet economists for the guidance of their nation's policy makers are naturally not available, much information about current economic research can be learned from a perusal of recent published writings. This includes a considerable literature consisting of books, pamphlets, and articles in magazines and newspapers. Little of this is generally available to private American citizens since much of the published output of Soviet economists is apparently not sent to the United States, or so few copies are sent that only a few specialists are able to obtain the material. The only source of supply for books is the Four Continents Book Store at 255 Fifth Avenue, New York City; and this store is prevented by law from sending material through the mails. Varying amounts of recent original Russian materials are available at the Library of Congress, the New York Public Library, Columbia University, and the American Russian Institute in New York City.[4] Attempts to build up such collections are now being made at Harvard and Syracuse universities. Obviously, for the student who is not located in or near Washington or New York, recent Russian materials are extremely difficult to obtain.

In view of the scarcity of the original materials in this country, it seems useful to present a short bibliography of significant recent economic writing in the U.S.S.R. Among the major studies written in the U.S.S.R. during the last two years are the following (some of the studies below were only in manuscript at the time the most recent information became available):

Soviet Economics and Economic Thought

1. *Ekonomicheskaya Pobeda S.S.S.R.* (Economic Victory of the U.S.S.R.), Moscow, 1945. Issued by the Institute of Economics of the Academy of Science of the U.S.S.R. under the direction and editorship of S. G. Strumilin, P. A. Khromov, N. A. Kovalevski, I. D. Laptev, and D. I. Chernomordik.

   Contains chapters by different authors reviewing war time developments in Soviet industry, manpower, productivity, agriculture, transport, trade, and finance.
2. *Ocherki Istorii Russkoi Ekonomicheskoi Mysli* (Essays on the History of Russian Economic Thought). Issued by the Institute of Economics under the editorship of P. A. Khromov and I. D. Udaltsov.

   This is to be a four-volume work tracing the history of Russian economic thought from the ninth to the twentieth century. The first volume, which is believed to have been issued in 1945, traces the development from the ninth to the middle of the nineteenth century and has five sections:
   (a) General character of the development of Russian economic thought.
   (b) Economic thought in pre-feudal and feudal Russia.

[4] The paucity of Russian economic material for Americans should be contrasted with the very full knowledge of American economic affairs and writings displayed by Russian authors. Judging by the references cited in Soviet writings, Soviet economists have available virtually all newspapers, magazines, books, and government publications of any significance published in this country. Moreover, a reading knowledge of English is apparently much more frequent among Soviet economists than a reading knowledge of Russian among American economists.

(c) Economic thought in the epoch of Peter I.
(d) Economic thought in the eighteenth century (Lomonosov, Rychkov, Shcherbatov, Radishchev, etc.).
(e) Economic thought in the first half of the nineteenth century (Mordvinov, Turgenev, Pestel, Herzen, Milyutin, etc.).

The second volume is expected to be concluded during 1946 and will be devoted to the second half of the last century.

3. K. Ostrovityanov, ***Sotsialisticheskaya Sistema Narodnogo-Khozyaistva i Zakony ee Razvitiya*** (The Socialist System of National Economy and the Laws of its Development). (Place and date of publication unknown.)

   A discussion of Marxist-Leninist-Stalinist economic thought in the light of the institutional development of the USSR.

4. K. A. Pashitnov, ***Ekonomicheskiye Vozzreniya Dekabristov*** (The Economic Outlook of the Decembrists), Gospolitizdat, 1945.

   A review of the factors influencing the economic situation and the economic thought of the Decembrist revolutionaries and of Russia during the first quarter of the nineteenth century.

5. ***Ocherki Teoriya Sovetskogo Khozyaistva*** (Essays on the Theory of the Soviet Economy), edited by K. A. Ostrovityanov, Moscow, 1945.

   A series of essays on various aspects of the Soviet economy, based on the new orientation of the teaching of Soviet political economy as introduced in 1942. The essays deal with the laws of development of a socialist economy, the rôle of planning, the law of costs in the Soviet economy, the rôle of money and monetary circulation, economic accounting, collective farm income and differential rent, Soviet trade and the collective farm market, and the theory of socialist production.

6. N. N. Rovinski, ***Gosudarstvenny Byudzhet SSSR*** (The State Budget of the USSR), Gosfinizdat, 1944.

   A comprehensive account of the preparation and execution of the Soviet budget, prepared as a textbook for financial and economic technicians.

7. M. I. Bogolepov, ***Sovetskaya Finansovaya Sistema*** (The Soviet Financial System), Gosfinizdat, Moscow, 1945.

   A brief pamphlet description of the USSR's financial organization and its operation.

8. V. M. Batyrev and V. K. Sitnin, ***Finansovaya i Kreditnaya Sistema SSSR*** (Financial and Credit System of the USSR), Moscow, 1945.

9. D. V. Savinski, ***Kurs Promishlennoi Statistiki***, (Course in Industrial Statistics). (Probably published in Moscow, 1944.)

10. ***Slovar-Spravochnik po Sotsialno-Ekonomicheskoi Statistike*** (Handbook of Social and Economic Statistics), Gosplanizdat, 1944.

    A very valuable guide to the definition and compilation of Soviet statistics. Invaluable to the user of current Russia data.

11. V. S. Nemchinov, ***Selskokhozyaistvennaya Statistika s Osnovami Obshchei Teorii*** (Agricultural Statistics with the Basis of General Theory), Moscow, 1945.

    A textbook of agricultural and economic statistics, including such

topics as compilation of data, index numbers, linear, multiple and curvilinear correlation, etc.

12. A. Ya. Boyarski, *Kurs Demograficheskoi Statistiki* (A Course in Demographic Statistics), Moscow, 1945.
13. A. Leontev, *O "Kapitale" Marksa* (On Marx's "Capital"), Moscow, 1945.
14. A. Kurski. *Sotsialisticheskoye Planirovaniye Narodnogo Khozyaistva SSSR* (Socialist Planning of the National Economy of the USSR), Gosplanizdat, Moscow, 1945.

    A pamphlet discussing the rôle of planning and methods used to obtain fulfillment of plans.
15. B. Sukharevski, *Sovetskaya Ekonomika v Velikoi Otechestvennoi Voine* (The Soviet Economy in the Great Patriotic War), Moscow, 1945.

    A pamphlet discussion of wartime economic problems.
16. S. V. Sholts, *Kurs Selskokhozyaistvennoi Statistiki* (Course in Agricultural Statistics), Gosplanizdat, 1945.

    A basic text for collective farm personnel and students of agricultural economics.

Foreign Economic Developments[5]

1. R. S. Levina and I. I. Goldshtein, *Osobennosti Germanskogo Razboininichego Imperializma* (Characteristics of Predatory German Imperialism).

   German economic and political development from Bismarck to Hitler.
2. L. Ya. Eventov, *Ekonomika Anglii vo Vremya Vtoroi Mirovoi Voiny* (England's Economy during the Second World War).
3. E. Varga, *Izmeneniya v Ekonomike Kapitalizma v Itoge Vtoroi Mirovoi Voiny* (Changes in the Capitalist Economy Resulting from the Second World War).

   Analyzes war developments and concludes that most capitalist countries, except the USA and Canada and the neutrals, were gravely weakened by the war. Predicts further sharpening of the "contradictions" of capitalism with chronic mass unemployment, market gluts, and underutilization of industrial equipment. Sees the strengthened position of the USSR in the world economy "exercising a stabilizing influence on the economies of neighboring countries having democracies of the new type."
4. I. Trakhtenberg, *Finansovaya Itogi Voiny* (*Problemy Inflatsiya*) (A Financial Summary of the War with Special Attention to Problems of Inflation).
5. A. Shpirt, *Izmeneniya v Ekonomike Syria i Topliva vo Vtoroi Mirovoi Voine* (Changes in the Economics of Raw Materials and Fuel in the Second World War).

[5] This list consists of studies made at the Institute of World Economics and World Politics. It is not known how many, if any, of these studies have been published in full. A glance at the titles of articles in *Mirovoye Khozyaistvo i Mirovaya Politika*, given below, suggests that some of the studies in this list appeared in that magazine, in whole or in part.

6. V. Lan, *SShA ot Pervoi do Vtoroi Mirovoi Voiny* (The USA from the First to the Second World War).
7. M. Bokshitsky, *Tekhno-Ekonomicheskiye Sdvigi v Promishlennosti SShA vo Vtoroi Mirovoi Voine* (Technical-Economic Trends in American Industry during the Second World War).
8. I. Dreizenshtok, *Zheleznodorozhny Transport SShA vo Vtoroi Mirovoi Voine* (Railway Transport in the USA in the Second World War).
9. I. Sosenski, *Voyennaya Ekonomika Kanadi* (Canada's War Economy)
10. A. Petrushov, *Agrarniye Otnosheniya v Germanii* (Agrarian Relations in Germany).
11. Yu. Vintser, *Nemetskiye Bankiri i Plutokraty* (German Bankers and Plutocrats).
12. S. Vishnev, *Voyennaya Ekonomika Italii* (Italy's War Economy).
13. V. Avarin, *Borba za Tikhi Okean* (Struggle for the Pacific Ocean). A study of Japanese-American economic conflict in the Orient.
14. E. Pigulevskaya, *Morskoi Transport Yaponii* (Japan's Sea Transport).
15. E. Kovalev, *Arenda i Arendnyye Otnosheniya v Kitaye* (Tenancy and Tenant Relations in China).

Economic journals in the USSR include *Planovoye Khozyaistvo* (Planned Economy), *Mirovoye Khozyaistvo i Mirovaya Politika* (World Economics and World Politics), *Novoye Vremya* (New Times), *Sovetskyye Finansi* (Soviet Finances), *Vneshnyaya Torgovlya* (Foreign Trade), and *Sotsialisticheskoye Selskoye Khozyaistvo* (Socialist Agriculture), among others. The first two of these, however, are by far the most important professional economic periodicals published in the Soviet Union and it seems desirable, therefore, to list their recent articles. In the case of *Planovoye Khozyaistvo*, the chief articles appearing in 1945 and the first two issues in 1946 are listed, while for *Mirovoye Khozyaistvo i Mirovaya Politika*, the chief economic articles in the 11 issues which appeared in 1945 and two 1946 numbers are listed. The titles of the various articles are given in English translation so as to be useful to the maximum number of readers.

Planovoye Khozyaistvo

No. 1—Jan.-Feb., 1945

Editorial—The National Economy of the USSR in 1945
Z. Atlas—Monetary Circulation in the Socialist Economy
A. Galitzki—Railroad Transport in 1945
A. Grigorev—On Labor Norms in Industry
B. Sukharevski—The First Plan of Great Work (on the occasion of the 25th Anniversary of GOELRO).
A. Terpigorev and A. Sudoplatov—Some Problems of the Restoration of the Donbas Coal Industry
L. Eventov—Changes in the American Economy During the War

No. 2—Mar.-April, 1945

Editorial—The State Budget of the Victorious Soviet Power
A. Baikov—The Technical Plan for 1945

I. Gladkov—Lenin and the Organization of the Soviet Military Economy during 1918–20
S. Demidov—Reserves for Raising the Yields of Agricultural Crops
M. Mkrtchyan—The USSR's Petroleum Industry in the Years of the Patriotic War
A. Petrov—Methods of Calculating the National Income in the USA and England

No. 3—May–June, 1945

V. Burgman—The Way to a Higher Technical Level in the Construction Industry
A. Galitzki and I. Libin—The Outlook for the Electrification of the Railroads of the USSR
B. Sukharevski—Victory in the Patriotic War and the Soviet Economy
Sh. Turetski—Tasks in the Increase of Internal Industrial Accumulation
A. Sharov—The Restoration and Construction of Dwellings in the Cities of the USSR
K. Dimitrov—Rumania's Economy and the Outlook for its Development
I. Trakhtenberg—The Conversion of Capitalist Countries from War to Peace Economies

No. 4—July–Aug., 1945

Editorial—The Five Year Plan of Restoration and Development of the National Economy of the USSR
N. Bruevich—The Academy of Science and the National Economy of the USSR
B. Dimitriyev—Concerning Correct Crop Rotation
A. Lyubimov—The Next Tasks in the Development of Commodity Turnover.
L. Sapozhnikov and L. Ulitski—Basic Problems in the Chemical Processing of Coal in the USSR
Z. Shashkov—Basic Problems in the Development of River Transport
R. Levina—Land Reforms in Hungary, Rumania and other Countries
M. Miznikov—On the Problem of the Military Economy of Fascist Germany

No. 5—Sept.–Oct., 1945

V. Vologdin—The Utilization of High Frequency Currents in Industry
S. Volfkovich—New Resources of the Fertilizer Industry
L. Volodarski—The Restoration and Development of Leningrad Industry
V. Zotov—The Post-war Outlook of the Food Processing Industry
I. Kovalev—Restoration and Development of Railroad Transport
S. Kaftanov—Preparation of Specialists in the Coming Five Year Plan
M. Saltikov—Mechanization of the Lumber Industry
Sh. Lif—Government Regulation of Industry in the USA

No. 6—Nov.–Dec., 1945

Editorial—Economic Summary for 1945
A. Probst—Problems of the Fuel Balance in the Postwar Period

E. Ryssakovski—Problems in the Electrification of the National Economy of the USSR
B. Vatulin—Basic Tasks of Siberian Agriculture
L. Maisenberg—Price Formation in the Soviet Economy
K. Bozhikov—Bulgaria's Present Economic Situation

No. 1—Jan.–Feb., 1946

A. Zelenovski—Twenty-Five Years of the State Planning Commission
I. Gladkov—Lenin and the Organization of the State Planning Commission
G. Sorokin—The Stalinist Five Year Plans
A. Baikov—Problems of Technique in the Outlook for the Plan

No. 2—Mar.-April, 1946

N. Eremenko—Restoration and Development of the Iron and Steel Industry in the New Five Year Plan
A. Panov—The Coal Industry in the Five Year Plan
A. Galitski—The Postwar Five Year Plan for Railroad Transport
S. Demidov—Restoration and Development of Agriculture in the New Five Year Plan
G. Kosyachenko—Increasing the Nation's Material and Cultural Living Standards in the New Five Year Plan
S. Vishnev—Industry of the Capitalist Countries in the Postwar Period

Mirovoye Khozyaistvo i Mirovaya Politika

No. 1—Jan., 1945

E. Varga—The Decisive Rôle of the State in the War Economies of the Capitalist Countries
L. Frei—Post-war Problems of Foreign Trade Policy
R. Levina and I. Goldshtein—Characteristics of the Economic and Political Expansion of German Fascist Imperialism

No. 2-3—Feb.–Mar., 1945

I. Trakhtenberg—War Finance and Inflation
V. Cherpakov—Problems of the Partial Demobilization of American Industry
E. Varga—Post-war Business Cycle Problems
Yu. Vintser—Post-war Plans for Nationalization in England and the USA

No. 4—April, 1945

M. Bokshitski—Technical-Economic Changes in American Industry during the Second World War
B. Kugel—Influence of the War on the Automobile Park of the USA
S. Zakharov—The International Trade Union Conference in London
I. Dreizenshtok—Railroad Transport in the USA and its Post-war Outlook

No. 5—May, 1945

E. Pigulevskaya—Japan's Ocean Transport and the Pacific War
E. Varga—The Course of the Business Cycle after the Conclusion of the War in Europe

No. 12—Dec., 1945

V. Lan—Reconversion and the Unemployment Problem in the USA
M. Kogan—The American Oil Industry during the Second World War
M. Rubinshtein—The Secret Diplomacy of International Monopoly
B. Dantsig—Agrarian Reform in Turkey
Statistical Supplement—Published in separate volume; contains basic economic data for foreign countries.

No. 1-2—Jan.-Feb., 1946

A. Petrushov—Agrarian Reform and Democracy
V. Sokolov—The Anglo-American Economic Agreement
S. Drabkina—The Strike Movement in the USA
B. Christov—The Economic Situation of Bulgaria
V. L.—On the Anglo-American Oil Agreement

No. 3—March, 1946

J. Pevsner—Japan after Capitulation
I. Faingar—Concentration of Capital and the Part Played by the Monopolies in Fascist Germany
I. Sosenski—The Postwar Food Problem
N. Veitzman—The Financial Position of the Biggest Industrial Monopolies in the United States at the Beginning of Reconversion
Note—Expenditures of the USA Abroad During the War

Some indication of the breadth of interest of Soviet economists working directly for a government agency may be obtained from the following list of contents of one number of the official organ of the Soviet Foreign Trade Ministry. The articles listed are taken from the October, 1945, issue of Vneshnyaya Torgovlya (Foreign Trade), a monthly journal:

A. Ivanov—The USA's Export-Import Bank
N. Cheklin—A Summary of Lend-Lease
F. Piskoppel—Conjuncture of the World Wheat Market in 1945/46
A. Gorchakov—On the Foreign Tourist Trade
V. Gostev—Cartels in the USA
A. Korobov—The Development of Brazilian Industry

It is readily apparent even from a quick survey of the titles of books, studies, and articles listed above that, next to the problems of their own country, Soviet economists are concentrating upon the most careful and detailed study of the American economy, particularly its current development and future outlook. There would seem to be good reason to advocate that this attention should be reciprocated by American economists who must more and more take cognizance of Soviet policies in the most diverse areas of domestic and international economic activity. But before this is possible steps will have to be taken to increase the flow of economic materials and to increase the number of economists competent to use the data in original Russian sources.

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Revision of British Company Law

The English Company Acts, revised at periodic intervals to place limited liability enterprise under state scrutiny, have been subjected to recent detailed criticism by a committee of inquiry under Mr. Justice Cohen, a judge of the King's Bench Division of the Supreme Court of Judicature.[1] This committee, composed of distinguished members of the bar, economists, accountants and business men, was appointed by the Board of Trade to consider and report what major amendments were desirable in the Companies Act, 1929, and in particular to review the requirements prescribed in regard to the formation and affairs of companies and the safeguards afforded investors and the public. Its report, published in June, 1945, has elicited wide comment in both Britain and America as it provides one of the best reviews of traditional and contemporary accounting and corporate practice in the former country. In addition, the committee proposes reforms, some conservative, others drastic, for blatantly outmoded or illegitimate business procedures, but it has skillfully avoided "placing unreasonable fetters upon business which is conducted in an efficient and honest manner," while making sure that "as much information as is reasonably required shall be available to shareholders and the public."[2]

The Labor Government has accepted the recommendations of the Cohen committee in full and is preparing a bill to give effect to them. Before this measure is introduced in Parliament, however, companies are urged to bring their practices in line with the committee's proposals, a suggestion which has been followed by a number of prominent firms.

The Cohen committee expresses satisfaction that the great majority of of public and private limited liability companies are managed honestly and are of marked benefit to British trade and industry. The fullest practicable disclosure of information concerning the activities of companies, in its opinion, will lessen the opportunity for abuse and coincide with an aroused social consciousness. The suggestions of the Amendment Committee have been aimed at aiding shareholders to exercise a more effective general control over the management of their companies, although they indicate that this aim will be attained "more by selection of the proper governing body of each company than by the provisions of any statute."

When viewed in its entirety, the Company Law Amendment Report is seen to stress that the future system of private enterprise must operate with complete honesty and with full publicity. When considering all aspects of business and accounting practice, including company managements, the committee has attacked each subject with equal intensity except, perhaps, that of the increasing use of nominees for shareholdings. So widespread, in fact, has this procedure become that in 1943 over 600,000 individual holdings of stocks and shares were registered in the name of nominees of joint stock banks alone. Drastic action is called for either by the prohibition altogether of the nominee plan (except for attorneys and trustees) or nominees should be compelled by law to disclose to the companies the names of their

[1] See Minutes of Evidence taken before Company Law Amendment Committee (London, H.M. Stationery Office, 1943), for details of this inquiry.

[2] Report of the Committee on Company Law Amendment, Cmd. 6659, pp. 115.

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beneficial owners. The Cohen committee rejected these alternatives, recommending that shareholders be required to state, on signing a transfer or direction to the company, whether they are beneficial owners or not; that if any person is directly or indirectly the beneficial owner of one per cent or more of the issued capital, he must make a full declaration to the company. In addition, the Board of Trade would be provided with drastic powers to investigate the ownership of shareholders whenever it is considered desirable in the public interest.

In relation to other matters, the committee's proposals are drastic, especially as to the secretiveness of company accounts and the responsibility of directors. It was not generally known, before the inquiry, that the proportion of private to public companies had been steadily increasing in recent years. The great advantage of the private company, the fact that it need not file its accounts with the Registrar of Companies, has led many public companies to convert their subsidiaries into private companies. The Amendment Committee has suggested that no private company can claim exemption from filing accounts if its membership includes a body corporate (other than a corporation sole), or if a body corporate is beneficially interested in its shares. Although this recommendation permits the private family company to go unhampered, it stops abuses on the part of public firms. In addition, holding companies are to disclose full information about their subsidiaries by publishing consolidated accounts. On the presentation of accounts generally the committee follows the suggestions of the Institute of Chartered Accountants, coming out strongly against hidden reserves and for greatly enlarged financial statement data.

One major weakness of the Companies Act, 1929, was that directors were only liable for untrue statements in a prospectus. The Amendment Committee recommends that they should be liable at civil law also for misleading statements and for the omission of material information which may be misleading. It will also make the expert liable for any untrue or misleading report which he formally allows the directors to include in a prospectus. Advertisements for "placings" are to be put on the same footing as prospectuses.

In framing its report, the Company Law Amendment Committee has avoided making any proposal which would restrict honest business management, and it has endeavored to provide every possible impetus to increased publicity of financial facts. The balancing of these objectives, each with its proper emphasis and with relation to the nation's expanding peacetime economy, transforms what might otherwise have been a dry state paper into a well-conceived approach to the reform of major deficiencies in prevailing Company Law. The incorporation of the Cohen committee's recommendations in British statutory law should be facilitated both by their moderate tone and by the gravity of the business, accounting, financial and managerial weaknesses they seek to correct.

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[1] Report of the Committee on Company Law Amendment, Cmd. 6659, pp. 115.

Mr. Sumberg's Interpretation of the Soviet Turnover Tax

In the March, 1946, issue of this *Review*, Mr. T. A. Sumberg in his article, "Soviet Union's War Budgets" provides a valuable summary and analysis of Russian wartime finance. In speaking of the "turnover tax," Mr. Sumberg states: "The tax is the main financial instrument by which the Russian state curtails consumption in order to promote capital construction and national defense. Offering no possibility of evasion by the taxpayer-consumer, it is also an efficient weapon for the forced mobilization of the community's savings in the interest of rapid industrialization and urbanization."[1] This statement suggests a point of view which, it seems to me, should not be left unchallenged. It is difficult to understand how the tax can operate to curtail consumption. The allocation of resources in Russia as between production for war and for civilian purposes has been determined by direct rather than by financial means. The over-all plan predetermined what resources were to be devoted to war needs and what to civilian uses. If by "consumption," is meant "real" consumption, it is not clear how the turnover tax made any difference in the quantities of civilian goods made available to the general public. Soviet civilians would not have had more food if the tax had not been imposed.

One may also question whether the tax should be regarded as borne by consumers. In a socialistic state, the price of products sold by the trusts are established by administrative rule. Whether the tax raises prices depends not upon the tax itself but, rather, upon the accompanying instructions, if any, to trust price-fixers as to what price changes are to be made. If no price change is made with the imposition of the tax, the tax is without significance. A change would be made in accounting terminology only. Instead of all of the net return of the trusts being called "profits," a part would be called "turnover tax yield" and the remainder, if any, "profits." Such a procedure would alter labels, not substance.

The Soviet practice appears to adjust prices in accordance with changes in the rates of the turnover tax. Even in this event, the tax itself is also of little significance; what is important is the decision to charge the public different prices. In a setting of diminishing supplies of real things, Soviet officials were forced to decide to what extent to employ price and to what extent to employ direct controls to ration the limited supplies among the members of the public. A decision to ration by price alone would call for raising prices under such conditions. The price policy of the government is important because it determines to what extent monetary mechanics (money expenditures and prices) are to be used to ration available supplies to the public. Whatever its price policy, it seems untenable to hold that the civilian population as a whole would be worse off, even if prices were set so high as to make all non-monetary rationing devices, such as rationing cards, selected admittance to special stores, standing-in-line, unnecessary. The population as a whole would get the same quantities, but a decision to use price alone to ration might, and probably would, have given some people

[1] *Am. Econ. Rev.*, Vol. XXXVI, No. 1 (March, 1946), pp. 119–20.

more real things and others less. The case for non-price rationing in Russia is much the same as the case for rationing in wartime in capitalistic countries. In both types, the pattern of income is unequal and the rich would, in either case, consume unduly at the expense of the poor.

Under socialism, it is doubtful whether consumers can be taxed by a turnover tax levied by the state upon its own agencies. Taxation implies that someone is forced to give up something to the state which he would have retained if the state had not exercised its taxing power. The "turnover tax" does not do this. A state sales tax upon products sold by state agencies is an insistence by the central administration that the accounting practice of the trusts label part of the profits "tax receipts" instead of simply "profits," and the tax *may* act as an administrative instruction to change prices of products. Only the price change can be significant, and it has significance as a decision to ration more or less by price and less or more by direct means. Given the price policy of the government, the "tax" is purely nominal in character and can scarcely be regarded as being a burden to anyone.

If this point of view is correct, the tax should not be regarded as a weapon to "force mobilization of the community's savings." If, with increases in tax rates, state agencies charge higher prices, the action has the effect of rationing relatively more by price and, in addition, it takes more money out of the hands of the public. With less money, people may spend less in the future and thereby reduce the work-load of non-monetary rationing devices and increase the relevance of price as a rationing device. Thus, it seems to me that the turnover tax should not be considered as one of the more important aspects of the Soviet financial system.

EARL ROLPH*

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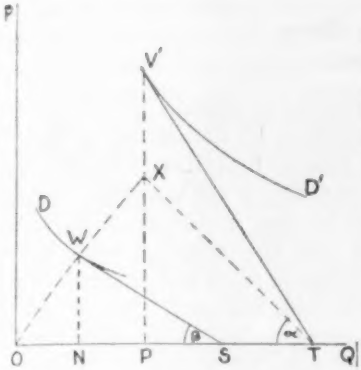
Geometrical Note on Elasticity of Demand

The graphical evaluation of elasticity may be approached in several different ways. If the discussion be restricted to natural scales, two principal methods are generally used. The first uses length ratios, the other employs constant outlay curves. Both of these methods have their limitations. This appears particularly in comparing the relative elasticities of points on two demand curves. Suppose we wish to compare elasticities at two points, one located on a given demand curve, the other located on this demand curve after it has been shifted upward and to the right. A comparison of length ratios might be confusing. A perhaps simpler method may be evolved as follows:

Let us compare the elasticity at the point W, Ew, with the elasticity at V, Ev.



Draw a tangent to D at W, intersecting the abscissa at S. Draw a tangent to D' at V', intersecting the abscissa at T. Extend OW to cut the perpendicular $V'P$ at X. Connect X and T. Then, if the angle β is greater than the angle α, the elasticity at V' is greater than that at W because

$$Ev=\frac{\tan\beta}{\tan\alpha}Ew.^1$$

John S. Henderson

[1] This may be easily proved as follows: By definition, $Ev=\frac{dq}{dp}\cdot\frac{p}{q}=\frac{pt}{pv}\cdot\frac{pv}{op}=\frac{pt}{op}\cdot$ But $\frac{pt}{px}=\frac{1}{\tan\alpha}\cdot$ Substituting we secure $Ev=\frac{px}{op}\cdot\frac{1}{\tan\alpha}\cdot$ But $\frac{px}{op}=\frac{wn}{on}\cdot$ Therefore, (1) $Ev=\frac{wn}{on}\cdot\frac{1}{\tan\alpha}\cdot$ By definition, $Ew=\frac{ns}{wn}\cdot\frac{wn}{on}$; substituting from (1) we secure (2) $Ev=\frac{Ew}{\left(\frac{ns}{wn}\right)}\cdot\frac{1}{\tan\alpha}$. But (3) $\frac{ns}{wn}=\frac{1}{\tan\beta}\cdot$ Substituting (3) in (2), we secure $\frac{Ev}{Ew}=\frac{\tan\beta}{\tan\alpha}\cdot$ But since the tangent of an angle increases with the angle, $\frac{Ev \gtrless Ew}{(0<\theta<90°)}$ according as $\alpha \lesseqgtr \beta$.

MEMORIALS

John Henry Gray
1859-1946

For nearly half a century Professor Gray has occupied a prominent place in American economic education, particularly in his chosen field of railroads and public utilities. In an era when the general practitioner was in vogue, the figure of Gray as a liberal, perhaps something of the iconoclast, certainly as an "expert" in government and public service, stands out in bold relief. He was a pioneer in the development of that specialization which has accelerated the progress of scientific knowledge in more recent times. He did much to bridge the gap between the arm-chair economic theorist and the practical specialist. And withal Gray seemed to lose none of the inspirational and mellowing influence that he had upon his students and disciples.

John Henry Gray was an outstanding teacher and scholar in a generation of economists who were remarkable for their broad culture and social mindedness—John B. Clark, Henry Adams, Hadley, Ely, Seligman, Taussig, Davenport, Hollander, and others. That he is entitled to a place even among these economic notables is due to the wide range of his interests and the long-sustained period of his productive effort. He began his professional career at the age of twenty-eight as an instructor in political economy at Harvard and continued as professor and head of the department in the graduate school of the American University at the age of seventy-three, a span of forty-five years; and his activity as a writer and pamphleteer continued to within a few years of his death at eighty-seven. These fruitful years of extraordinary physical and intellectual vigor added to his accomplishments, but they do not explain the versatility of his interest. For Gray was not only a stimulating and inspiring teacher; he was a distinguished public servant; he was a painstaking associate editor of the *Economic Bulletin* for several years and of the *Journal of Accountancy* for seven years; he was a forceful writer on a broad range of subjects and a recognized authority in the field of public utilities and railroads.

In general, Gray divided a distinguished career as an economist among the lecture halls of major colleges and universities, government and public service, and the liberal movement in which he was a fearless spokesman for human rights.

Dr. Gray began teaching as an instructor in political economy at Harvard in 1887, the year he graduated from Harvard with his bachelor of art's degree. Two years later he went to Germany, the mecca of aspiring scholars, to earn his Ph.D. at the University of Halle. Back in the United States with his European doctor's degree, in 1892 he was appointed professor of political economy and social science at Northwestern University, where he remained for fifteen years. In 1907 he was called to the University of Minnesota as professor of economics. He stayed there until 1920, when he accepted a similar position at Carleton College which he held for five years.

After three years with the Interstate Commerce Commission as chief analyst and examiner in the Commission's bureau of valuations (a position he had previously held from 1917 to 1919), Dr. Gray returned to teaching as head of the department of economics in the graduate school of the American University from 1928 to 1932.

Dr. Gray entered government and public service in the decade before the turn of the century. In 1893 he served as chairman of the World's Congress Auxiliary on Political Science in Chicago, and from 1894 through 1896 he was chairman of the municipal committee of the Civic Federation of that city. The United States Department of Labor called on Dr. Gray in 1902 to investigate restrictions of output in Great Britain. He also represented the United States Commissioner of Labor at the International Cooperative Congress in Manchester, England. Later that year he represented this nation at Congresses of labor, commerce and industry in Düsseldorf, Germany, and Ostend, Belgium.

Returning to America he became a member of the National Civic Federation Commission on Municipal Ownership in 1905, and served the Commission as expert in the field of American investigation. From 1911 to 1914 he served as a member of the Federation's Executive Council Department to probe the regulation of public service corporations. He was later made secretary of the department and director of its investigations. During the first World War Dr. Gray also served in the United States Army as a Lieutenant Colonel and as a member of the board of appraisers of all property commandeered for the Army. He claimed the distinction of being the second man in the United States to enroll in the American Legion. He was a member of George Washington Post No. 1 of Washington, D. C.

At the time of his leaving Carleton, which he often referred to as a "bully good" college, Dr. Gray presented his entire library to the College. This collection comprises about a thousand volumes in the fields of economics, history, and politics. The collection includes rare editions of early economic writings, such as a copy of the third edition of Adam Smith's *Wealth of Nations*, and other books long out of print, and a large number of pamphlets dealing with specialized topics such as railroad transportation, public utilities, and taxation. For about ten years after Gray left Carleton, a prize of $100 known as the John H. Gray prize was offered by Mr. Dwight S. Bobb of Chicago for the best essay by an undergraduate on an economic topic. This prize afforded keen competition among economics majors during those years.

A prolific writer, Dr. Gray in 1913 was the author of a compilation and analysis of all American statutes relating to the regulation of public service corporations. In 1929, with G. W. Terborgh, he made a study of Urban Mortgages in the United States since 1920; with Jack Levin, in 1933, he published a study on the Regulation and Valuation of Public Utilities. Many articles, too numerous to mention, he wrote for economic and other scientific journals.

In 1914, Professor Gray was president of the American Economic Association.

In January, 1930, Dr. Gray was indignant over the speculative excesses that contributed to the stock market collapse in the fall of 1929. He charged former President Coolidge, Andrew Mellon, and Professor Irving Fisher as being most responsible for "continuing and expanding the mania" of speculation, which preceded the Wall Street slump.

During the last decade of his life, which was spent in Washington, D. C., Dr. Gray was a familiar figure at the Cosmos Club, and was active in the work of the People's Lobby. Since 1935 he had served as treasurer of that organization. These sunset years also afforded him an opportunity to satisfy a longing for travel. This took him to Europe and Africa, to the West Indies and South and Central America.

As an economist Gray early threw off the spell of the classical economists and was influenced to a greater degree by modern schools of thought. He had little patience with such classical doctrines as the labor theory of value, the wage-fund theory, or even Taussig's refinement of the "discounted" marginal product of labor. Wherever and whenever possible, he urged his students to get quantitative measurements—"facts and figures." His experiences in government service, particularly his work with the bureau of valuations of the Interstate Commerce Commission, confirmed his belief that theory and practice should complement each other—"fit each other as hand and glove." It was this insistence on factual support that explains, in part, his great success as a teacher. His students recall with sentimental pleasure his classroom Odysseys, his informal manner, his generous tolerance of an opposite point of view, his sparkling wit, his genial humor. But beneath all these traits, his students learned to think, accurately and independently, and to act upon deep conviction.

Among economists of Gray's generation, there may be more profound and erudite scholars, more vigorous theoretical analysts, more original social philosophers, but it would be difficult to find an economist who combined theory and empirical reference in a more original and useful way, and a finer gentleman, perhaps, one could never find.

JESSE S. ROBINSON

Carleton College

Umberto Ricci

On January 3, 1946, Umberto Ricci died in Cairo while returning from Constantinople to Rome, to occupy again the University chair in political economy from which he was driven by the fascist government in punishment for his criticisms of their economics.

Self-educated and without benefit of academic degrees, Umberto Ricci found his career when Ghino Valenti, first among agricultural economists of the past generation, wanted his help in the formation of the first register of agricultural property and thus rescued him from simple administrative work. Thereafter, his rise was rapid. It was my good fortune in 1910 to recommend him, together with Pasquale Jannacone as secretary general and Giovanni Lorenzoni as agricultural economist, to head the statistical work of the International Institute of Agriculture. It was a superb triad,

and the Institute won a world-wide position of prime importance through its publication of agricultural monographs and statistics. Professor of economics and statistics in Macerta, Parma, Pisa, and Bologna, he was called in 1924 to succeed Maffeo Pantaleoni in Rome. Driven out by fascism in 1928, Ricci was called in 1929, together with Arangio Ruiz, Bresciani Turroni and Siotto Pentor, to complete the magnificent company of Italian teachers with which the Egyptian government intended to give luster to the law faculty of the new National University of Cairo. He remained there until 1940, when Italy's entrance into the war severed friendly civil relations between the two countries. But in 1942 the Turkish government called him to succeed Röpke in economics at Istanbul. The calls from Rome, Cairo, and Constantinople testify to the renown acquired by Ricci in the international scientific world, which generously elected him to honorary membership in such societies as the American Economic Association, Academy of Lincei, the International Institute of Statistics, the Cobden Club of London, the Society of Political Economy of Paris, the Egyptian Institute, and the International Colonial Institute.

He was a learned and penetrating economist. From him we have in the theoretical field a volume on capital and numerous monographs on supply and demand curves, on the theory of wants, on savings and taxation—which will and should long endure for their persistency in analysis of the problems and consistent courtesy to those concerned. But in this too brief memorial it is possible to record only a few of the theoretical contributions made by him. It is better instead to record the fact that he could descend from the pure and sometimes rarified air of abstract contemplation into the arena of applied economics, with vigorous thought and a fighting spirit. His writings of 1921 on the bankruptcy of city finances, of 1920 on Italian protectionists and economists, on politics and economics, and his many articles published in magazines and newspapers are memorable. One of those, insistently requested by a fascist magazine, cost him his chair in Rome. If ever there was a punishment that brought honor to the victim and disgrace to the punishing power, that was it. For Umberto Ricci, in that article as well as in others, utilized superbly the weapon of subtle irony that brings smiles to the reader and mortally offends the hapless one who has exposed himself to destructive criticism. Unable to reply to the criticisms effectively and therefore atrociously derived, the Dictator vindicated himself by depriving Ricci of his chair. He had reason to fear him, for Ricci had opposed fascism in discussions as well as in writings. Although in the beginning, in what might be called the period of fascistic financial liberalism, he also shared the illusion that some progress might be made with Mussolini, yet when Salandra, Liberal leader, joined the opposition following Mussolini's speech of January 3, 1925, Ricci participated in the guidance of the Liberal party, firmly resolved to oppose the fascists.

Hence the act of revenge, which honored him. Now we are assailed with regret that he can no longer be with us to fight the battles of liberty and to carry on the work of criticising economic errors and contradictions, a task always necessary and perhaps more so in times of freedom than in times of tyranny. For if in the latter times we can blame mistakes on the tyrant, in the former we cannot blame others, and to accuse ourselves is

always distressing. With the passing of Umberto Ricci we have lost not only a master in the field of science, but also a master of economic criticism. We lament not only for science, but also for Italy, the unjust fate that brought him death in a foreign land on the eve of that devoutly desired return to his native land.

LUIGI EINAUDI

Rome, Italy

Henry Calvert Simons

Henry C. Simons, professor of economics at the University of Chicago, who died June 19, 1946, was a stout-hearted and tough radical-libertarian in the tradition of nineteenth century economic liberalism. His major writings all essentially were tracts, tracts which, offering a broad, positive and radical program for liberals, countered on all the main fronts of political economy the collectivist implications of both the new "liberal" economics of "planning" and the older, but still virile, special-interest economics of reactionary conservatisim.

Simons's own political faith was the traditional liberal one epitomized in distrust of private concentrations of power (monopoly), in decentralization of government, and in minimal (negative) use of the state's monopoly of power. Minimal exercise of power, however, was not "do-nothing" government. In order to minimize political control of relative prices (resource allocation), the state must establish and vigilantly preserve against special interests conditions in which free-market (competitive) resource allocation can be efficient.

His positive economic program for liberal government emphasized three crucial and interrelated problem areas in which democratic government least has recognized its positive responsibilities for maintaining free-market rules: (1) money, (2) monopoly, and (3) equality of personal economic power.

The most radical part of his program set forth the "rules of the game" for the "financial good society." The state must recognize that it must reserve to itself alone the power to control the value of money and, recognizing its monopoly of power, must act responsibly according to stable rules of law. To establish its monopoly, it must strip private corporations (particularly, but not exclusively, banks) of their present power to control the value of money through their creation and destruction of "near-moneys" (deposits and debt instruments).[1] To achieve legal and administrative simplicity in monetary control, maximum responsibility of government to the electorate, and minimum misunderstanding by private enterprise, the federal debt structure must be converted rapidly into currency and perpetuities and the interest-bearing portion reduced to manageable proportions. To create the monetary certainty essential to a prosperous free-enterprise economy, the state must establish in law a definitely stated and stable monetary rule: stabilization of an index of the general price level (hence, indirectly, effective maintenance of aggregate money demand).

[1] It was here that the familiar "100% banking" scheme entered the program.

Upward movements of the index would be countered by a budget surplus (currency retirement) obtained largely by lowering the personal income tax exemption limits (and, if necessary, by "across-the-board" increase of rates) and downward movements by budget deficits accomplished by the reverse tax changes and by currency issue (debt retirement). Borrowing would be used only as a stop-gap anti-inflationary device.

The problem of depression, however, he saw could not be solved simply by the establishment of reasonable monetary certainty so long as the economy contained large and crucially significant sectors in which prices controlled by industrial and labor monopolies had only upward flexibility. Assurance of the requisite price flexibility must be established by the state through "deliberate creation and preservation of competitive conditions" wherever possible. His case against private monopoly, however, was much larger than the case against short-run price inflexibility. Depression or not, monopoly involves interference with efficient (equal productivity) allocation of resources, particularly labor resources. Furthermore, the existence of large-scale private concentrations of power along functional lines in labor unions and industrial associations imposes upon government the settlement of conflicts which can be resolved only by collectivization or destruction of the monopolies and which must be resolved if the state is to endure.

Professor Simons proposed that government attack the problem of inequality of personal economic power through the progressive personal income tax. The personal income tax should be relied upon as the major source of government revenue and the inequality-creating excise taxes (with a few exceptions) should be abolished. The tax should be based on a broad definition of taxable personal income by eliminating distinctions with respect to kind of income (particularly capital gains) and tax avoidance, particularly through tax-exempt security earnings and the tax provisions on capital gains and undistributed corporate earnings should be minimized.

Simons prefaced his "Some Reflections on Syndicalism"[2] with a quotation from Alfred Marshall: "Students of social science must fear popular approval; evil is with them when all men speak well of them. If there is any set of opinions by the advocacy of which a newspaper can increase its sales, then the student . . . is bound to dwell on the limitations and defects and errors, if any, in that set of opinions; and never to advocate them unconditionally even in an *ad hoc* discussion. It is almost impossible for a student to be a true patriot and to have the reputation of being one at the same time." He was one of few economists who have been outspoken on public policy, who followed Marshall's admonitions unfailingly. In his pursuit of the correct economic policies considerations of political expediency were anathema to him.

Not the least of his virtues was the polished style of his writings. They are not surpassed in economics in their sprightliness and, what is rarer, in lucidity and directness.

H. G. LEWIS

University of Chicago

[2] *Journal of Political Economy*, Vol. LII (March, 1944), p. 1 ff.

BOOK REVIEWS

Economic Systems; Post-War Planning

Road to Reaction. By Herman Finer. (Boston: Little, Brown. 1945. Pp. xii, 228. $2.00.)

Freedom under Planning. By Barbara Wootton. (Chapel Hill: Univ. of North Carolina Press. 1945. Pp. vii, 180. $2.00.)

These lucid and interesting books discuss timely matters, and are well worth the few hours required for their reading. Each replies to Friedrich A. Hayek's *Road to Serfdom.* Each, as is true of the Hayek book, is more likely to be judged by the individual reader's ingrained economic and political philosophy than it is to change that philosophy to any marked degree.

Professor Hayek's *Road to Serfdom* is frankly "political." It defends the politico-economic policy of adhering to the free market as the all-important device for determining what should be produced, and how, and for whose benefit. Socially imposed controls, Professor Hayek admits, must modify this, even possibly to the extent of providing basic guarantees of minimum health facilities and of economic security. However, desired modifications must be made by *laws* which are clear, relatively simple, and mean the same thing to all men; they must not be made through *discretionary powers* exercised by economic planners and administrators. The latter, once granted in substantial number, will feed upon themselves, ending in dictatorship of the few over the many—"serfdom." The book projects into the policy sphere previous writings of Professor Hayek in which, adhering more strictly to economic analysis, he contrasts economic organization and processes under collectivism with those of a free market economy.

Professors Finer and Wootton attack this thesis from the same bases. They contend that existing democratic processes in the United States and Great Britain are sufficiently deep-rooted and sufficiently developed as techniques to permit grafting onto them substantial elements of economic planning. They decry the "lunacy" that planning some things means planning all, pointing out that enough general agreement on some comprehensive economic objectives now exists to permit governmental agencies to construct detailed plans for, and to administer programs looking toward, their effectuation. As more and more specific goals are agreed upon, planning and administration can and must take over without violating any of the essentials of democracy or individual freedom.

These writers struggle with the most serious dilemma of our modern democratic societies: Economic processes and means of controlling them have become increasingly complex and technical in nature while Mr.

Average Citizen, whose desires constitute orders in a true democracy, has little time or ability to study and understand economic phenomena. In effect, Professors Finer and Wootton say to Mr. Average Citizen: Do as you would if you were building a house and yet knew nothing about the techniques of architecture or engineering. Formulate your idea of the type of house you want, of its broad features. Then hire an architect who will supervise the planning and building. Let him fill in the details of the plan, make estimates of the costs of alternatives, come back to you for discussions of such alternatives, hire the builder who will take over the actual construction and, finally, supervise the builder's work to protect your interests. Without technical construction knowledge, you can determine from time to time whether your architect is achieving the goals you have set. You will get a house most closely conforming to your desires if you proceed in this manner.

Substantial portions of Professor Finer's efforts are devoted to disproving positions taken by Professor Hayek. He denies the latter's contention that we must choose between the two extremes, all planning and no planning, calling this a ***reductio ad absurdum*** argument (p. 26). He labels as stupid Hayek's assumption " . . . that political power is neither limited in scope, restricted in authority, responsible in operation, nor coöperative and decentralized in execution" (p. 67). He vehemently denies that fascism and nazism arose out of socialism and from trends started by socialists in Europe; rather, they were middle class movements shaped by the spirit of the people involved (pp. 88–101). The destination of the Russian government as well as its present methods must enter into an evaluation of the Russian system (p. 103). Hayek's supreme reliance upon the efficacy of competition and free pricing is declared unsound; "private enterprise is not innocent; it is guilty and sick" (p. 157). Even to enforce free competition to the point where it could achieve the ends which Professor Hayek attributes to it would be such a tremendous task that it would require more government action than his thesis possibly could permit (pp. 78–81). The objective reader must admit these are telling blows, skillfully directed. However, he may hesitate to agree with Finer that he has shown: " . . . Hayek's apparatus of learning is deficient, his reading incomplete; that his understanding of the economic process is bigoted, his account of history false; that his political science is almost nonexistent, his terminology misleading, his comprehension of British and American political procedure and mentality gravely defective; and that his attitude to average men and women is truculently authoritarian" (p. xii).

On the constructive side, Professor Finer proposes planning as a "middle way," an approach he believes especially suitable to the spirit of Great Britain and the United States (pp. 123–25). "The two greatest inventions of the nineteenth century are representative and responsible democracy, and expert and impartial administration" (p. 219). These must now be used to achieve for mankind the full benefits of modern technological advances. Certain reforms to rationalize our democratic legislatures are in order in the United States; the executive branch of government must be strengthened

through a "cabinet with collective responsibility"; the two must be coordinated by "productive formal liaison between the White House and the Congress" (pp. 213–216). Such reforms, linked with full use of our knowledge of administrative technique, make us ready to plan and administer comprehensive programs for economic betterment under government aegis. "Society as a whole, acting through its rationally constituted and deputed organs, is in a far better position than at any time in history to move forward to the collective management of many spheres of social life" (p. 225). "The freedom of our time cannot possibly be an entire freedom from government, it can only be a freedom within government" (p. 223).

Professor Wootton's ***Freedom under Planning*** in a sense supplements Professor Finer's book. It fills in some of the substance of the "middle way." It is more moderate in tone and less sprinkled with barbs at Hayek.

There is nothing new in Professor Wootton's point that economic inequality and monopoly presently deprive the citizen as consumer and as worker of many of the "freedoms" theoretically possessed under an idealized competitive system. Cultural and civil freedoms, she argues, need not be jeopardized by planning if the right people are chosen to exercise the power inherently accompanying successful planning. In Russia there has been no attempt to combine planning with civil liberties.

Some of the best portions of Professor Wootton's book are devoted to an analysis of the practical problem: What should be planned, and how? Planning is defined as the "conscious and deliberate choice of economic priorities by some public authority" (p. 6). Hence, those things which should be planned and carried forward by public agencies are those on which there is general agreement—that is, agreement on the broad objectives, for the technical question of methods must be left largely to the skill of the planning technicians. Planning and freedom are compatible only so long as there is agreement on objectives. Some areas of agreement now exist and others can be found if we have a will to find them. Whereas present political discussions and conflict emphasize points of disagreement, political parties should devote more effort to finding and exempting from political controversy areas of agreement which are commonly known to exist. Once found, programs to achieve such objectives may be safely placed outside the legislature, their administration being undertaken by boards or commissions, such as the London Transport, the Central Electricity Board, and the British Broadcasting Corporation, to cite Professor Wootton's British examples. All this will require centralized authority. Realizing this, and freed from the obligation to make decisions on detailed matters about which he knows that he knows nothing, the voter may be expected to put more effort and intelligence into expressing himself on questions which lie within his competence. Western democracy is young and Professor Wootton finds no reason to doubt its ability to devise increasingly effective methods for establishing accepted objectives and for delegating broad powers to governmental agencies to choose and administer the means of their attainment.

No conclusive evaluation of any of the three books discussed herein should

be essayed by a reviewer. Each expresses an economic philosophy—an approach to the basic problem confronting our society in this post-war world. If Professor Hayek is too dogmatic and overstresses the automaticity with which partial planning and control lead to minority planning of all and therefore to "dictatorship," possibly Professors Finer and Wootton are too optimistic about the ability of democratic societies to evolve improved techniques of popular control of society's objectives, and are inclined to give too little recognition to the successes of pressure-interest groups in perverting social objectives and devoting to their own limited ends the methods and personnel of administrative agencies established by government.

Every sincere student or practitioner of economic planning should read Professor Hayek. From him will come a conception of the vital necessity of forestalling government economic control from following those paths which destroy freedom. Professors Finer and Wootton, no less, should be required reading, for in them will be found sound and, we hope, practical recommendations on how to do the forestalling. Considered as a trilogy, these books at least attest our ability to formulate our major problem in concrete and forceful terms. This is the first step toward a solution which must be evolved if we are to live as free people in a world of economic abundance.

William N. Loucks

University of Pennsylvania

Jobs and Markets. By Melvin G. DeChazeau, Albert G. Hart, Gardiner C. Means, Howard B. Myers, Herbert Stein, and Theodore O. Yntema. A Research Study of the Committee for Econ. Development. (New York: McGraw-Hill. 1946. Pp. xi, 143. $1.60.)

I have had the good fortune to review nearly all of the Committee for Economic Development staff studies on postwar and peacetime adjustment and each time I have found myself framing the same sentence: here is the economists' contribution to short-run and middle distance public policy at its best. No one would underwrite all the analyses or concur in all the recommendations, and some of the monographs have been better than others. All, however, have been technically expert, carefully reasoned, with an emphasis nicely attuned to the importance of the issues with which they deal, and they have been elegantly timed. These, in fact, are the ideas that have guided the reconversion and while ideas (in competition with politics) have not had the monopoly that Keynes once so incautiously accorded them, they have been important. In most respects the great transition has gone rather smoothly—so far. The C. E. D. economists deserve their share of the credit.

This book, the capstone of the several studies of the transition, is fully up to the standard of the earlier studies on which it builds. It sets out the authors' conception of the grand strategy for moving workers into peacetime employment, for countering the inflation that (by the time the book was written) could be foreseen for the early stages and the deflation that

threatened thereafter. Essentially their prescription is to accept inflationary pressure in the early stages of the transition as an accelerant and painkiller in the process of reëmployment. This inflation they would hold in check by price controls—price control slightly softened, but still in the manner of Bowles rather than of Taft. With the completion of the changeover, and except for rents not later than June 30, 1947, they would substitute controls over the volume of spending. These latter controls should be as available to correct too little spending as to curb too much.

The recommended fiscal controls are fairly staple shelf goods. On the revenue side the authors advocate, in the main, machinery for prompt adjustment of taxes (in particular, delegation of authority to the Executive to adjust the first bracket of the personal income tax) when aggregate demand changes and increased reliance on personal and corporate income taxes with their "built-in flexibility." They have less faith in variations in expenditure and suggest that "the revenue side of the budget is where we must look chiefly for the adjustment of fiscal policy to market demand." Such faith in spending as they have, they invest in the "built-in flexibility" of a more generous social security system and, conservatively, in public works. Having given the Treasury a substantial if (by present-day standards) fairly orthodox assignment, the authors then put the Federal Reserve System back in active business. Alarmed by the large inflationary potential in bank holdings of government securities and their possible contribution to the public's already large supply of cash they propose a large increase in reserve requirements. Existing bank-held securities would be made specially eligible as an interest-bearing but immobilized reserve.

No summary, not even the authors' own, does full justice to a hundred odd pages of detailed resommendation but this, plus the inevitable plea for centralized fiscal management, is the heart of the program.

I, for one, have little quarrel with the C. E. D. program for what it does—and if price control is a good preliminary test it may go farther than Congress and the Administration are likely to get. The authors should perhaps have reminded their readers that the present danger of inflation and the eventual threat of deflation is given not alone by the holdings of cash and its equivalents but also by its distribution between income groups. They also elide the very real problem of forecasting and timing counter inflationary and deflationary action. However, a more important question is left unanswered. If, as the authors state, "sober weighing of the prospects forces the conclusion that inflation and deflation are both real possibilities," there is need for some assurance that their measures are relevant to the magnitudes of the movement that are in prospect. If price controls are to be discontinued by a given date and tax increases are impossible, will an astringent expenditure budget, the monetary controls and the "built-in flexibility" be sufficient? (The authors do not explicitly say that tax increases *are* impossible, but they seem to think so.) Will a downward swing in income be within the magnitude that conceivable adjustments in taxes and more modest adjustments in expenditure could counter? The American economy, it was learned from both the depression and the war, is capable of big things. Without suggesting that the C. E. D. economists should get

into the overly competitive business of model building, I would have wished for some weighting of their measures in relation to the contingencies to be met. An active fiscal policy poses questions both of kind and of amount.

J. K. GALBRAITH

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The Economic Lessons of the Nineteen-Thirties. By H. W. ARNDT. (New York: Oxford Univ. Press. 1944. Pp. 314. $3.75.)

This book gives a survey and analysis of the internal and foreign economic policies of the United States, Great Britain, France, Germany and Sweden in the inter-war decades, and concludes with an examination of the lessons to be drawn from these experiences. In undertaking a series of studies the Eonomic Group of the Chatham House Reconstruction Committee decided to prepare a report on the nineteen-thirties. The drafting of the report was done by Mr. Arndt, assisted by discussion with the members of the group. There was a large measure of agreement, but the report is Mr. Arndt's own responsibility.

Mr. Arndt concludes from the inter-war experiences that there could be little hope of an ordered world economy so long as the major countries were unable to cope with their own domestic problems. Accordingly a study which was aimed at international economic problems emerged as a study of the inter-action of domestic and international policies.

The outstanding internal problem of the inter-war period was undoubtedly unemployment. Mr. Arndt concludes that the American slump can in its origins be interpreted as the result of an overexpansion of some of the investment goods industries relative to the long-term needs of the American economy for capital equipment. In most of the European countries he finds that the depression was largely the result of external factors, the cessation of capital import, withdrawal of short-term credit, and the sudden fall of exports. In Great Britain there were special problems growing out of maladjustments incident to overexpansion of certain industries in World War I, and to technological and other changes. The deflationary spiral was in most countries accentuated by orthodox government financial policies.

In most cases large-scale intervention did not occur until the depression had lasted for several years. Yet in the end governments in all countries were forced to intervene.

Most countries tried to curtail imports and push exports to stimulate employment at home at the expense of other countries. Four of the five countries studied tried to combat the depression with "cheap money." Where building played an important part, the reduction in interest rates helped.

These two methods proved to be relatively ineffective. The heart of the problem was a deficiency of internal effective demand. Both consumption and investment needed to be increased. The New Deal in the United States, according to Mr. Arndt, attempted to bring about recovery largely by increasing consumer purchasing power, partly by redistributing income to the poorer classes and partly by direct payments to consumers. The sub-

stantial success achieved was, however, far from complete since the increase in consumer demand was not adequate to produce a satisfactory revival in the demand for capital goods. Mr. Arndt concludes that in advanced industrial countries methods of increasing consumers' demand cannot be relied upon to produce a recovery, once depression has been allowed to gather momentum.

Accordingly, it proved necessary to undertake public capital expenditures. This method was especially applied in Sweden, Germany and the United States, though in the German case it amounted essentially to a rearmament program. Experience shows that public capital outlays to be effective must be on an adequate scale and should be planned well in advance.

Mr. Arndt concludes that experience does not justify the oft-expressed fear that deficits will in periods of large unemployment produce inflation. Nor is it necessarily true that such deficits will permanently increase the tax burden. First, the loans may be used to finance productive capital outlays, and second, the debt will not impose any additional tax burden if the national income increases sufficiently to meet the interest charges. Finally, even in a private enterprise economy there are no rigid upper limits to the level of taxation provided care is exercised in the choice of taxes.

In the thirties countries were concerned with *recovery*. But the lessons point to the great importance of *maintaining* full employment or at least not permitting a serious collapse. Experience indicates three main threats to stability: (1) overexpansion of capital facilities, (2) inflation, (3) external shocks.

The first is peculiarly a danger for a country like the United States. The process of capital construction tends to proceed by leaps and to outrun the long-term needs. What is required is a greater emphasis on consumption. But it is a difficult matter for public policy to determine the appropriate magnitude of any such shift since the long-run requirements of a country for new capital equipment vary with the desirable rate of progress, the population trend, the nature of foreign demand, and government policy.

An equally difficult aspect of the problem of maintaining full employment is the danger of inflation. There were fears of speculative and inflationary excesses in 1929 in the United States and again in 1936–37, not to mention the war years. This remains for the future no less a political than an economic problem.

Some national economies are peculiarly in danger of shocks from without. The gold standard aggravated these shocks. Internal deflation and monetary insulation (exchange control) were the former methods of protection. The new monetary plans seek new and less harmful protective devices. But in the last resort the only way of safeguarding natural economies against external shocks is to diminish international economic instability by: (1) the maintenance of internal stability and full employment, and (2) international planned investment and trade programs.

The book closes with a review of the difficult problems of international

adjustment. We are compelled to face the fact that even with reasonable success, both with respect to our internal problems of stability and full employment and also our new international plans, international equilibrium is difficult on a multilateral trade basis. Mr. Arndt believes that the economic advantages of the optimum division of labor may have to be weighed against the social and economic disadvantages of international instability. Thus we may have to effect a compromise between the need for change and adjustment and the desirability of reducing to the minimum that instability of the market mechanism which exacted a terrible price in terms of social insecurity and economic loss during the inter-war period.

ALVIN H. HANSEN

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La France devant la Reconstruction Economique. By ROBERT MOSSÉ. (New York: Brentano's. 1945. Pp. 113. $1.00.)

This essay is an interesting, if impressionistic, sketch of the French economy before the war and of the outlook for the future as it appeared in October 1944 in the first flush of liberation. Although intended for popular consumption, it is nevertheless well disciplined and fairly comprehensive and reflects the author's background as a professor of economics in both France and the United States and as an economic adviser in various French ministries.

M. Mossé's picture of the pre-war French economy and its present prospects is characterized by an emphasis on certain intangible qualities, in some of which he sees a measure of compensation for the more conventional quantitative standards of successful economic activity, according to which France must accept a modest rank behind the great powers. Among the strong merits of the pre-war French economy he lists the qualities of "moderation" (small-scale enterprise in both agriculture and industry, suspicion of the grandiose); "harmony" (balance between industry and agriculture, absence of single-crop farming, relative abundance of many important raw materials), and a rather mysterious *efficience,* which would appear to be a characteristic Gallic aptitude for drawing a high degree of comfort and satisfaction from a relatively low standard of living combined with considerable leisure. The author's description of the capacity of the French to enjoy the simple pleasures of the poor may be of some interest as a footnote to the literature on the pitfalls of international comparisons of national income, but it has somewhat the air of certain American magazine articles in the early 1930's which sought to prove by eye-witness accounts the deep satisfaction which could be derived from the simple life enforced by the depression.

In contrasting pre-war France with other countries M. Mossé uses a rather sweeping brush, although several of his observations are penetrating. He sees France as having escaped the vicissitudes of Germany's hyperinflation after World War I and having avoided the latter's mass unemploy-

ment and excessive industrialization. Unlike the United Kingdom, France avoided an excessive dependence on imports, striking inequality of incomes, and vast distressed areas. Lacking the grand scale of the United States and the Soviet Union it steered clear of the extremes of prosperity and depression, the monotony of specialization, and the social insecurity of the former, while preserving a sounder evaluation of the present against the future than was possible under the forced pace of industrialization in the latter. Contrasted with Spain and Italy, pre-war France strikes M. Mossé as a land of prosperous peasantry, its center of gravity in a well-established middle class, moving slowly but steadily in the direction of higher levels of prosperity and industrial development. This rather rosy picture glosses over some of the difficulties resulting from the losses of foreign assets after the last war, the problems attendant on the devaluation of the franc, and the heavy burden on the economy of the military expenditures during the thirties.

The major defect counterbalancing France's pre-war economic virtues was, in M. Mossé's view, an almost Mohammedan spirit of resignation expressing itself in a fear of economically sound large-scale enterprise, either public or private, an aversion to innovations, and a bias against technology. While there is no attempt to explain "why France fell" in either economic or other terms, it is evident that this appraisal is intended to account for more than the merely economic difficulties of pre-war France. It would be interesting to have a more thoroughgoing examination of the economic manifestations of this attitude of resignation than is given in the limited compass of this essay. In the material recently released by the French government in connection with its application for a loan from the United States we have, however, several illustrations of the lagging efficiency of the French economy, which on this analysis would be attributable in large measure to the deep-rooted lack of enterprise of the French businessman, which was in no way compensated by the *élan* of the civil service. For example, the productivity of industrial labor in the United States increased by 330 per cent in the period 1900-1938 while in France the increase is estimated to have been only 130 per cent. The price of "moderation," "harmony," and *efficience* was apparently paid in low productivity and low incomes.

M. Mossé's account of the outlook for the future is naturally conditioned by his appraisal of the impact of the German occupation. The developments of the past year and a half would appear to confirm his judgment that the main French problem lies in the field of long-range reconstruction rather than in the immediate crisis of relief and rehabilitation faced by the countries of eastern and southern Europe. This question M. Mossé discusses largely in psychological terms rather than in concrete economic proposals. Although it is difficult at times to know whether he is describing the situation as it is or as he would like it to be, he credits the collapse of France and the German occupation with having administered a sort of shock treatment which will break the bonds of stagnation as far as the reactionary attitudes toward technology and economic experimentation are concerned.

On the direction which French economic policy will take, M. Mossé's judgments are cautious and moderate. In fact he inclines to the view that the restraints of war-time and the occupation may produce a strong reaction against collectivism. It is premature to pass judgment on this appraisal, but there are some indications in the recent nationalization of gas, electricity, insurance, and part of the banking system that the war has done more than create an aversion to direct governmental participation in economic activity.

Generally, M. Mossé's views on economic and social policy are not dissimilar from those associated in this country with the name of Professor Hansen, and the influence of recent Anglo-American thinking is evident in his recommendation of a national production budget, to be sustained by appropriate fiscal measures, and a mixed economy with adequate consideration for the political virtues of private enterprise. His judgment that "for the moment liberty has an incontestable priority in the preoccupations of the French over social justice" (p. 103) is an interesting commentary from someone described in the preface as an "economist of the left." And he adds a refreshing note of realism to the discussion of whether France is "going left" in observing that it is difficult to imagine French farmers organized into collectives in the Russian fashion.

The current preoccupation of the French government with a loan from the United States and the ambitious plans of industrial development associated with the name of M. Monnet are not reflected to any extent in this book although they might be taken as evidence that, after a belated start, the effect of the shock treatment is beginning to appear. There is mention of the necessity of raising the productivity of French industry and of doing away with agricultural protectionism, particularly in the case of wheat. But the crucial question of how far France should go in the direction of industrial development and the implications of the answer for the political as well as the economic life of the country are not developed. If the present plans are pushed, the industrialization of France will necessarily change the balance between industry and agriculture, involving a greater dependence on imports and presumably some loss of the qualitative virtues which M. Mossé values highly. The question of how far in this direction France can profitably go is, of course, bound up with political and economic developments beyond her control, and it is not surprising that this book does not provide a definite answer.

One minor but significant recommendation that M. Mossé makes is for the improvement of French economic statistics and the development of comprehensive economic analyses to furnish the basis for effective governmental policies. The development of national income and related statistics in France has been long overdue and it is only to be regretted that it may have required a national disaster to stimulate action to produce them.

Walter A. Chudson

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Statistical Methods; Econometrics; Economic Mathematics; Accounting

The Fundamentals of Accounting. By DONALD H. MACKENZIE. (New York: Macmillan. 1946. Pp. 683. $4.00.)

Many instructors of accounting have in recent years either watched or taken an active part in the formulation and presentation of accounting principles. Scores of articles have appeared in the accounting journals and noteworthy contributions have come from the releases of the Executive Committee of the American Accounting Association, the American Institute of Accountants' committee on accounting procedure and the Securities and Exchange Commission. It must be assumed that these accounting instructors have hoped that the new textbooks would present materials which would enable accounting students to reap the benefits sown by these valuable contributions to accounting thought. As one reads the preface of Mr. Mackenzie's new book, he is led to believe that his hopes have been realized.

The author states in his preface: "The development of the fundamentals of accounting as presented in this volume follows the philosophy of the Executive Committee of the American Accounting Association." He adds, "The subject is developed from defined concepts of cost and revenues.... From these concepts the profit and loss statement and the balance sheet are developed. This means that the fundamentals of accounting are not developed from the balance sheet and the balance sheet equation as is usually the case."

Emphasis on costs and revenues and the matching of costs against revenues to determine profit is indeed in keeping with modern accounting thought. The American Accounting Association's monograph *An Introduction to Corporate Accounting Standards* by W. A. Paton and A. C. Littleton stressed this aspect of accounting. Textbooks in the past have largely obscured this aspect by the stress given to the technical phases of statement preparation. In reality, the emphasizing of costs and revenues is an emphasizing of the periodic aspects of accounting, *i.e.*, the determination of revenue for a particular segment of the life span of a business, the determination of the costs expired in obtaining this revenue, and the determination of those costs to be carried over and applied against revenues of future periods. Accounting statements are the products of this periodic aspect of accounting and if it were not for the fact that the life span of a business enterprise is cut up into these accounting periods, accounting problems would be greatly minimized. Students of accounting must be made aware of this fact if they are to appreciate the problems faced by accountants. The use of the cost and revenue approach may accomplish this purpose.

Mr. Mackenzie, however, is hardly convincing when he states that, "under the cost and revenue approach, the equation and double entry bookkeeping become incidental to the fundamentals of accounting." It is difficult to get around the fact that expense and revenue accounts are derived from

the exchange of assets. It cannot be denied that revenue is measured by assets received while expenses are measured by assets expired. In fact, Mr. Mackenzie puts it this way: "Thus, the revenue accounts show the amount the assets are increased as a result of revenue transactions, and the expense accounts show the amount the assets are reduced because of these transactions" (page 68). And again (page 124), "As a result of revenue transactions assets are acquired, but other assets are expended. If the assets received are greater than those expended, a profit is made; if they are less, a loss is incurred." This would indicate that the author, too, believes that the underlying divisions of accounting data are still assets and equities. As further evidence of this belief, use of the conventional balance sheet approach is postponed only one chapter. The usual introductory chapter on The Nature of Accounting is followed by a chapter on Revenues, Expenses, Profits, and then comes the traditional chapter on The Balance Sheet. This in turn is followed by rather standardized chapters dealing with the development of the double entry system and the various bookkeeping techniques and mechanisms.

The above comments should not be construed so much as a criticism as to point out that in the main the author has not made a radical departure from established practice in presenting the basic subject matter of accounting. He should be commended, however, for the serious effort he has made to present certain controversial subjects. Such topics as inventory valuation, treatment of bad debts, purchase discounts, etc., are not lightly brushed aside but are given a fair and comprehensive treatment. The chapters dealing with cost accounting are particularly comprehensive and discussions of such important matters as fixed and variable costs, increment and decrement costs, out-of-pocket costs, price policies, etc., are included.

The arrangement of the text is such that it is readily adaptable to either the regular two-semester introductory accounting course or the one-semester survey course offered by some universities. The material is so presented that the instructor may emphasize the theoretical, managerial or bookkeeping features of accounting. Each chapter is followed by ample and well-chosen questions and problems for class discussion as well as numerous problems for home or laboratory work. The data for four practice sets are included at the end of the text and ruled forms are available for the student's convenience in handling the laboratory problems.

To this reviewer Mr. Mackenzie's book is a significant addition to the many textbooks available to instructors in elementary accounting. He has demonstrated in a thoroughly understandable style that he is aware of the recent developments in his field and has presented a book which will provide students not only with a knowledge of accounting techniques but an understanding of the uses and limitations of accounting data.

RUFUS WIXON

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National Income and Product; Income Distribution; Consumption Statistics

Income from Independent Professional Practice. By MILTON FRIEDMAN and SIMON KUZNETS. (New York: Nat. Bur. of Econ. Research. 1945. Pp. xxxiii, 599. $4.50)

This volume scores well within the pattern of National Bureau products. Like others, it is nicely executed and done by competent collaborators. Unlike certain others, however, it bulges with analytic discourse and quantitative content in appraisal of institutional settings and derived statistics. Due to want of basic data, the authors center attention upon the incomes of five professional practitioner groups — physicians, dentists, lawyers, accountants, and engineers — and even specialize in the incomes of the first two. They thus secure a freedom of deployment that permits of intensive application of the tools of economic theory, econometrics and statistical methodology in rather amazing degree. The outcome abounds with neat excursions in methodological technique. But more important, the volume also becomes a penetrating review of factors influencing practitioner earnings so that it merits serious attention from all persons who seek facts regarding these incomes.

Allusion to contents suggests the range of interest. The five professions are first considered with note taken, among other things, of the number in each calling and the extent of independent practice, the nature and customs of professional schools and licensing authorities, and the comparative success of persons seeking to qualify for practice. Available sample data on incomes are then scrutinized; this is followed by quantitative comparison of incomes in the professions with other incomes and by detailed study of general income characteristics of each of the practitioner groups. Finally comes analysis of the apparent influence of location—geographical and community-size—and of other factors such as years of training and of practice, specialization in practice, and form of practice, whether sole proprietorship or partnership. The development concludes with a review of changes in income over time. It deals first with continuity in the relative income position of the individual practitioner, based in part upon an attempted isolation of transient as opposed to permanent influences, and second with a review of movements over time in incomes realized by practitioners. Appended are a critical discussion of the reliability of the sample income distributions and a section giving in full the basic data and derived statistical constants.

This reviewer is not inclined to attempt adverse criticism despite definite reservations regarding the failure to incorporate more recent data and the sheer length of a volume that is spun from so limited a central subject matter. Such comments would derive mainly from individual preference. The reader no doubt will wish to reflect for himself upon a number of factual nuggets. One may be the tentative seventeen per cent figure for the excess in physicians' over dentists' incomes that time and costs of training seem to warrant; another, the contrasting finding that physicians' incomes have averaged nearly one-third more than dentists. The differential patterns

of physicians' incomes as analyzed by years in practice, extent of specialization, and size of community also merit reflection.

DWIGHT B. YNTEMA

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Business Cycles and Fluctuations

The National Debt and Our Future: A Look Ahead on the Chase-Hansen-Berle Superhighway to Deficit Spending Prosperity. By ELTON RAYMOND SHAW. (Washington: Shaw Publishing Co. 1946. Pp. 189. $2.50; paper, $1.50.)

The National Debt and Our Future by Elton Raymond Shaw presents an unusual problem to the reviewer. The book is intended to be an argument in popular terms against the various proposals for deficit spending as an element in fiscal policy. One's views on the validity of the author's objective will depend upon one's opinion with reference to the economic programs derived, correctly or not, from Keynesian analysis. My own belief is that the concept of stagnation and oversavings have been so overemphasized as to divert attention from equally or more important problems and to mislead public opinion towards a belief that a simple panacea for our difficulties may be found in legislation, as in the Employment Act of 1946. Accordingly, I have considerable sympathy with what I believe to be the purpose of Shaw's book.

The author, however, admits of no modifications of traditional dogmas favoring annual budget balancing and rapid debt reduction. In his attacks he proceeds by assertion, oversimplification, and not infrequently by personal ridicule. In this, his book is no more subject to criticism than many of the publications of the spending enthusiasts. For example, he quotes and criticises on page 24 a memorandum by Stuart Chase to the staff of the T.N.E.C. in which Chase suggests a technique in the selection of words to describe government spending which, in the opinion of an outside critic, would have the effect of confusing if not misleading the uninitiated. But Shaw's book proceeds along the same lines, though perhaps less subtly. The result does not advance the discussion of any policy on its merits, nor does it lead to clear thinking. The substance of the author's economics is obscured by his attempt to secure rejection of the spending doctrine by establishing a general attitude and point of view in the reader's mind.

Unless careful analysis and balanced judgments are no longer appropriate in popular discussions (and perhaps they have become obsolete), one will prefer such a book as *Economic Stagnation or Progress*, by E. W. Swanson and E. P. Schmidt, which is also written as a popular refutation of the Keynes doctrine as developed in this country, but proceeds with an entirely different tone and approach. We can only hope that such a volume as the outstandingly fine symposium *Financing American Prosperity*, edited by Homan and Machlup, is not above the level of the informed general reader.

Though attention is particularly directed to the dangers of debt expansion

along traditional lines, Shaw also attacks the mature economy and excess-savings doctrines which lie back of the proposals for government spending. He makes use of much recent literature in frequent quotations. He also effectively uses many of the more extreme statements of the Keynesian group, especially on the burdenless nature of a domestic debt.

An appendix reprints the bulletin by Dr. L. Albert Hahn published by the Chamber of Commerce of the United States. This is on a plane so different from the body of the book that it is hard to understand why the two were brought together. In brief, Hahn cites his own earlier advocacy of "eternal prosperity through monetary and credit manipulation" (p. 157) as evidence that he cannot be accused of exaggerated orthodoxy. Since the publication of his *Volkswirtschaftliche Theorie des Bankkredits* in 1920, however, he has increasingly turned to what he calls the "classic theory of unemployment." This theory attributes unemployment to wage rates so high as to prevent full absorption of all available labor. His observations on Continental European developments after 1927, particularly in Germany, have played a large part in his present thinking.

Dr. Hahn refers to what he considers the "paradoxical idea that employment is more or less a function of cost of capital rather than of labor" (p. 171). This in turn rests upon the overemphasis on savings and their use, which leads to what he calls a policy of increasing money wages even at the expense of real wages. Hahn believes that Keynes's argument rests on an assumption that labor is more concerned with money than real wages and that price increases can restore an underlying balance in wage costs. While agreeing with the fact of wage rigidity on the downwards side, Hahn stresses their flexibility upwards and then concludes that "every reflation would thus lead to a new wage increase and every new wage increase to new deficit spending" (p. 178). His view is summarized in the statement that "the idea that not wages but interest rates, and these alone, have to be lowered to incite full employment, has proven to be an illusion . . . " (p. 178).

The denial by Hahn of the possibility of inadequate investments does not appear to the reviewer to be adequate (p. 175). In this respect his analysis seems deficient. However, his emphasis on the importance of wage rates, both nominal and real, is particularly appropriate at the present time when the alleged general need for maintaining consumption spending has been misused as a basis for wage increases which in turn have accentuated the wage-cost-price spiral.

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Public Finance; Fiscal Policy; Taxation

Postwar Taxation and Economic Progress. By HAROLD M. GROVES. (New York and London: McGraw-Hill. 1946. Pp. xiv, 432. $4.50.)

The relationship of this thoughtful and elaborate study to Professor Groves's earlier book on *Production, Jobs and Taxes* (1944) is similar to that

of matrimony to betrothal. Tentative and provisional plans are relinquished. An irrevocable choice is made. The stage is set for a permanent structure. In view of the expert knowledge of the author and his association with the Committee for Economic Development, his tax program deserves both scientific and political attention.

Still, the book covers a narrower subject than could be expected from its title. We are missing a full discussion of the impact of the volume of taxation on economic progress, of the place of taxation in various alternative budgets, of its relation to public spending and to debt management and of its general function as a contractive and an expansionary force and as an economic stabilizer, in other words the role of taxation in postwar fiscal policies. When, in the second to the last chapter of the book, the author turns to Fiscal Policy and the Functioning of the Economy in the Postwar Period, he deals with it as an appendix rather than as a necessary foundation of his program. This attitude cannot be fully explained by the fact that, following the research program of the C.E.D., fiscal-monetary policy was to be discussed by another forthcoming report. In spite of this division of labor, the tax program could have been based on general fiscal considerations. Apparently, Professor Groves prefers a more specific approach. To him, the primary obstacle to post-war economic progress is the lack of integration between federal corporate and personal income taxes. He thus advocates a basic reorientation in this field. Almost two-thirds of the book are devoted to the exploration of necessary changes in direct business taxes and in the personal income tax.

This tax program is not new. It is linked with the best fiscal traditions of the free enterprise system. Since his main concern is with "the selection of tax measures that will least impede production" (p. 349), he is bound to oppose any considerable duplication in taxing business income. In the interest of economic progress, the corporate tax is to be deëmphasized or abandoned. Since, on the other side, the author does not like to run the risk of an unbalanced peacetime budget, other elements of the tax system are to be strengthened. Since Groves shares the traditional predilection of numerous post-classical writers for the personal income tax, it is logical to advocate its extension and intensification. Although death taxes represent another unexhausted tax reserve of the Treasury, they are only his second choice.

Other possibilities are briefly examined and, in general, strongly opposed. Consumption taxes and sales taxes can be reconciled neither with the goal of a high-consumption economy nor with the need for tax-consciousness. Groves's verdict hardly provides for extenuating circumstances. Even during the past century when capital was at a premium and the citizen was not very conscious of his political responsibilities, federal consumption taxes were only "tolerable." "They are less appropriate today and will become still less appropriate as time goes on" (p. 295).

Let us concentrate on the arguments in favor of a deëmphasis or an abandonment of the corporate tax. The reader may feel surprised that such an abrupt turn in tax policies is recommended without previous clarification of a basic question, namely, what social groups, at present, bear the burden of

the corporate tax. Although the book abounds with references to shifting and incidence of the corporate tax, Groves frankly admits that his analysis does not arrive at any conclusion concerning its ultimate economic effects. Whether, therefore, the final result of the suggested change would be a shift in the tax load from rich to poor or *vice versa* "cannot be definitely ascertained." The following argument is characteristic of the experimental character of the program. "Much depends on assumptions as to the incidence of the corporate tax. On the theory that this tax is borne largely by stockholders, the recommendations might mean some shift of relative tax burdens from the top to lower levels of income. If the corporate tax falls heaviest on consumers and wage earners, the opposite conclusion would seem more plausible. On the former assumption, the retention of a moderate independent business levy would make a net downward shift less likely. For political and fiscal reasons such tax is very likely to be retained" (p. 185).

Is it permissible to endorse a decisive change in the American tax structure while being in the dark concerning its economic effects? It seems to me that our answer can be in the affirmative only if any of the three possible incidences of the corporate tax, namely on stockholders, consumers, or workers, is to be considered as less desirable than an intensification of the personal income tax: (1) the absorption by stockholders because of its greater deterrent effect on risk-taking; (2) the forward shifting to consumers because of its interference with a high level of consumption; and (3) the backward shifting to workers because of its regressive effect. Without an evaluation along these lines the resolution to abandon the corporate tax would appear premature.

As long as the controversy concerning the final burden of the corporate tax cannot be settled, some other propositions also are open to objection. If "the incidence of the tax is uncertain but in all probability it is divided among stockholders, wage earners, and consumers" (p. 72. See also pp. 28, 36, 66, 109, 110), the present set-up may still be criticized for duplication. In so far as one fraction of the corporate tax would be absorbed by the stockholders, risk-taking capital would be discouraged and a special penalty imposed "at a particularly strategic spot in the economic process" (p. 31). The magnitude of this fraction, however, and consequently of the penalty imposed on investment cannot be ascertained. I do not think that the author should have tried to support his case against the corporate tax by submitting a calculation of this penalty based on the unproved assumption that the entire burden of the corporate tax rests with the stockholders (see Table I, p. 30).

The attack on the corporate tax from the viewpoint of corporation finance is questionable. If the stockholders participate, to an indefinite extent, in the final burden, it is hard to see why the discrimination between bond and stock financing ought to be "substantial" in this case. Groves bases his argument on an assumption he generally denies: "A dollar of income earmarked for the bondholder is paid to him in full, but the profit dollar earmarked for the stockholder is, in effect, cut to only sixty cents. This encourages corporations to issue bonds instead of stock." It seems to me that, by follow-

ing the general trend of the author's analysis, the "unfortunate influence upon corporate and individual decisions" (p. 31) could be evidenced only by accountants and other experts in corporation finance.

Other elements in Groves's tax program run more along the customary lines of thought. Following a careful appraisal of the treatment of undistributed earnings in the United States and Great Britain, he advocates a low-bracket personal rate to undistributed corporate income. The repeal of the wartime and declared-value excess-profit taxes by the Revenue Act of 1945 confirms his earlier written recommendation to reserve this unusual measure for war application only. His opinion that the peacetime employment of the excess-profits tax would endanger risk enterprise and business efficiency has been widely accepted. His suggestion of foregoing the use of a corporate levy as a tool against monopoly is less convincing. His dislike of such a policy is based on three grounds: (1) it is uneconomic to single out efficiency and risk for special taxation; (2) in the absence of price controls, an excess-profits tax may miss its target by being passed on, at least to some extent, in high prices; (3) if monopoly profits should be taxed at all, a personal tax would be far more effective than a corporate tax. The validity of all three arguments is open to question. While leaving this matter for discussion elsewhere, it must be emphasized that the cautious attitude of the author as far as tax measures are concerned does not imply any relaxation in his opposition to monopoly. In political terms, he wishes to shift responsibility from the Treasury to the Department of Justice, to the Federal Trade Commission or to OPA (if this agency should still exist): "The thing to do is to restore competition or to regulate prices" (p. 80).

These critical observations are not intended to detract from the value of an unusually comprehensive study. Groves's mastery in both the general and the technical tax field renders the book an ideal introduction into current discussions. His gift for organizing an almost unlimited amount of facts and figures deserves high praise. The study should be widely consulted by the many tax lawyers, tax accountants, fiscal scientists and economists who, in an era of fast progressing tax specialization, cannot afford to go back to all the primary sources. Even opponents of his tax program will welcome the succcinctness of his arguments.

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Guideposts to a Free Economy. By HARLEY L. LUTZ. (New York: McGraw-Hill. 1945. Pp. ix, 206. $2.00.)

Tax Program for a Solvent America. By the Committee on Postwar Tax Policy; Harley L. Lutz, Director of Research. (New York: Ronald Press. 1945. Pp. x, 278. $3.00.)

The first of these two books on post-war taxation and fiscal policy comprises a series of short essays, many of which first appeared in *The Tax Review*, a Tax Foundation publication. The series begins with a comment on the national income in relation to employment; proceeds to consider the in-

cidence of business taxes, theories of tax distribution (progressive taxation), and the sales tax; then concludes with treatment of the social security system, national planning, and other aspects of fiscal policy.

The author's viewpoint is suggested in the following propositions: Rigid wages and progressive taxation are the principal causes of mass unemployment. "The cases of monopoly are so rare as to be the extreme exception rather than the rule." "Progressive taxation is the most effective possible way of softening the enterprise system before moving in to take it over into a collectivist regime." The most efficacious means of taxing small incomes is the retail sales tax. "It requires a very low estimate of the intelligence of the people to assume that they would go on saving indefinitely" after the possibilities of profitable investment had been saturated. Economic planning is "a short cut to serfdom." "Functional finance" is "not shocking" but "merely funny"; its error lies in the assumption that changes in the money supply will suffice to determine purchasing power, ignoring the counterbalancing factor of turnover. A simple recipe for prosperity is: "If you want to make a dollar by any honest means you are free to try, and if you succeed you may keep it."

The essays are a succinct, vigorous, and interesting statement of the viewpoint of so-called "sound finance." They would have been more persuasive, in the reviewer's opinion, if they had shown some awareness of the abuses of the "enterprise system," and if they had not allowed so many half-truths to go unqualified. Nevertheless, a new brief for what was once at least the orthodox view of economics, including a defense against its Keynesian attackers, is definitely useful.

The second book submits a post-war tax plan devised by a committee of which Professor Lutz was director of research. As to broad fiscal policy, the report recommends an annually balanced budget, regular retirement of debt, conservative public expenditures, and a diversified tax system. Balancing the budget over the business cycle, with surpluses from the good years offsetting deficits from the bad, is rejected as the high road to "creeping inflation." The possibility that unemployment might be caused by oversaving is ignored. All will be well if enough incentive is allowed the risk-taker and a high level of business confidence is maintained.

As to specific tax measures, the personal income tax with a broad base and high standard rate should be the principal reliance. Corporations should be taxed at the standard rates applicable to individuals, and a credit should be provided to prevent the double taxation of equity earnings. A carry-over of business losses and more freedom in deducting depreciation should be allowed.

Less generally acceptable will be the view that undistributed profits should not be specially taxed, particularly if present treatment of capital gains is to continue as recommended. The committee makes no suggestions regarding tax-exempt securities and allows present abuse of joint and separate returns to go unchallenged; these are considered minor issues. A broad system of federal excises is advocated for diversification, with a federal retail sales tax held in reserve should it prove fiscally necessary. Most doubtful of all is the recommendation that the death tax be surrendered

by the federal government to the states where interstate competition can be relied upon to protect the wealthy. (To say the least, this hardly seems essential to preserve "the vigor and vitality of the nation's economic system.")

The supporting arguments for the above and other recommendations include data comparing British and American sources of revenue and concerning sources of equity capital. Yield estimates of various combinations of taxes with various assumptions as to the national income are provided. The quantitative work appears to be carefully done, though the explanation of techniques is somewhat sketchy. Sections on federal tax administration and federal-state fiscal relations are also presented. The report is well written and ably reasoned.

Many differences in economic opinion arise from different interpretations of our recent experiences in the 'twenties and 'thirties. Neither experience ended well and wise policy requires avoidance of the errors of both. In the reviewer's judgment, these books would return us to the hard trail we started in 1920.

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Money and Banking; Short-Term Credit

The Bank of England: A History. By SIR JOHN CLAPHAM. (Cambridge and New York: Cambridge Univ. Press and Macmillan. 1945. Two vols. Pp. x, 305; vi, 460. $7.50.)

As Sir John Clapham wisely says, "a banking system is so closely associated with . . . what is almost the oldest and the most jealously guarded function of the state, the issue of money, that governments can seldom afford to leave it entirely unlicensed and uncontrolled." This fact is most notably true of a central bank. Such institutions are essentially monetary agencies, only incidentally and secondarily banks.

The inevitably close association between a central bank and the government is amply demonstrated in Sir John's *The Bank of England.* Not only was the Bank born of the government's need for funds, but throughout its history it has continued to provide loans to the state; and when monetary difficulties have arisen, the Bank has invariably consulted with and been guided by the government. At times the Bank has demurred to governmental demands, but seldom with success, and then only with respect to minor matters. The Prime Minister, Lord North, as early as 1781 described the Bank as "from long habit and usage of many years . . . a part of the constitution." In 1797 the Bank took Exchequer Bills, with a "gentleman's understanding" that they would not be thrown on the market and thus forced to a discount. During January, 1846, the Governor of the Bank was keeping the Chancellor of the Exchequer informed every few days. In 1857 Dobree, the Deputy Governor then in charge of the Bank, "was getting the bad news from New York, and he was in daily touch with Sir George Cornewall Lewis, Chancellor of the Exchequer."

Since a central bank is a monetary agency, our chief interest in the development of the Bank of England must lie in the monetary policies it has followed, and in its failure ever to evolve a consistent rule of action beyond that, apparently, of protecting its own reserves. In spite of the very welcome and imposing study that Sir John has presented, economists will feel some measure of disappointment, because information in regard to the policy of the Bank is meager. Perhaps this result should have been expected. The directors of the Bank have been men whose time and energies were taken up largely with their own affairs—Henry Thorntons and David Ricardos are rare among men of business. In any case, one is impressed with the sketchy character of the information on matters of policy that is revealed by the records of the Bank.

Typically, the record consists of a bald statement that a given action was taken. Thus, when the action of the Court in 1819 denying that the Bank could, by reducing its issues, cause the exchanges to become favorable was reversed in 1827, the later action was recorded in a marginal note to the earlier action—"rescinded, 6th December, 1827." Sir John writes that in 1907 the Court, *as usual*, "recorded no motives for its minutes." Such facts are meagre data for the reconstruction of the policy of the Bank.

The Bank, however, consistently came to the aid of the market in time of crisis; but whether this was a matter of a definitely formulated policy, or of opportunistic response to bleak necessity, is not made entirely clear. One infers that without much doubt it was the latter. "The year 1763 was one of international crisis and the Bank was doing its utmost to give help by free discounting." "We do know that the Bank was discounting liberally in June [1772], especially just after the crisis." "Lancelot Holland the Governor and Newman Hunt his Deputy reported that they had lent in 1866 an 'unprecedent sum' of upwards of four millions sterling to bankers, billbrokers and merchants, upon government stock and bills of exchange."

On occasions the Bank attempted to prepare for anticipated trouble. Sir John relates that "early in 1783 it limited the note issue by curtailing discounts." And again: "All through the year [1796] the Bank had been limiting its discounts with a view to reducing its note issue and lessening the risks of an internal drain. The policy would also tend, by its restrictive influence on the home price level, to help the restoration of the exchanges; but it is not certain that this was an object deliberately aimed at." Sir John might safely have written, I believe, that there is little probability that "this was an object deliberately aimed at."

In later years, more particularly after 1844, the anticipatory action of the Bank was largely reflected in its rate policy. Prior to the passage of Peel's Act, there was little attempt to use Bank rate as an instrument of control. There were but five changes in the discount rate on inland bills during the whole history of the Bank before 1822. The rate was five per cent throughout the period of the restriction. The first attempt (with the possible exception of 1822) of the Bank to use its discount rate for purposes of control came during the crisis of 1825, when in December the rate was raised from

four to five per cent. The application of the usury law to three months' bills was repealed in 1833, and thereafter Bank rate was changed more frequently although there were nevertheless five years from 1834 to 1844 inclusive in which no changes took place. Since the passage of Peel's Act, resort to rate changes has been frequent. Between 1844 and 1914 there were only two years, 1851 and 1895, in which no change took place.

The pattern of rate policy since 1844 is fairly clear. When the Bank anticipated trouble it raised the rate, and during crises it invariably took the same action. Nevertheless, what theoretical defense the Bank may have had for this action Sir John has not told us, presumably because the records of the Bank had no disclosures to make on this subject. We infer both from the action of the Bank itself and from the literature of the period (by which the directors must have been influenced in some measure) that the chief aim, probably the sole aim, of rate manipulation was that of protecting the reserves of the Bank. Bagehot could hardly have extended his criticisms to include the actions of the Bank during crises. After 1844 it raised its rate but expanded the volume of its discounts at such times, which is precisely the action that Bagehot thought proper for a central bank.

Through the years the Bank engaged in a great variety of operations, many of which reflect a wide departure from those supposedly "sound" principles of banking so much extolled from Adam Smith to H. Parker Willis. In this difference of opinion I must take the side of the Bank. At times the Bank has loaned on mortgages—especially in 1824. It has made advances to the city of London and to metropolitan authorities; to municipalities; to colonies; to various other public authorities—and for "permanent" improvements; but, most dreadful of all, to stock-exchange customers. Besides all this there has been the debt of the government to the Bank and the discounts and advances. In addition it "issued" and "managed" the debt of the British government and of other public agencies.

In 1850 the request of the secretary of the General Board of Health for a long-term loan for sanitary improvements was rejected, partly on the ground that "loans were usually only for ten or twenty years, and repayable by annual installments." "The Bank of 1880 was once called 'an investment bank,' because of its tiny portfolio of bills and its great holding of other securities." Advances to stock exchange firms "for the account" became an important source of revenue during the 1890's and were approved by the Court in 1900. Later, however, some of the officials wondered about this, but not for reasons that would have met the approval of those misguided economists who hold that only short-term commercial loans are appropriate for a bank—central or not. They felt that it was not proper for the Bank to compete in this manner with the London bankers when funds were plentiful. Nevertheless, such loans continued to be a steady source of revenue down to 1914. Throughout its history, however, the Bank has of course discounted bills and made short-term loans, although in widely varying amounts.

There are occasional references which reflect an indefensible attitude by the Bank on the subject of liquidity, and Sir John himself seems to have taken the same position. He implies approval of some short-dated tallies

and orders held by the Bank on November 10, 1696, on the ground that they were "payable within the year and so reasonably liquid." "There had been [in 1825–26] every need for liquidity: the bank would no doubt have been quick to turn its mortgages into cash, had that been a possible course." The Bank officials were confident in 1847, inasmuch as "for each of the two coming weeks they have a million and a half 'going off' —good paper that will bring in cash." "Semi-permanent" stock-exchange loans (as opposed to "liquid" loans "for the account") in the 1890's are condemned. Apparently the condemnation comes from both the Bank and Sir John. Seemingly one of the hardest of all lessons for central bankers to learn is that the only asset which is liquid for them in a crisis is cash.

The Bank's attitude toward a "Chancellor's letter" suspending the Act of 1844 in crises has typically been one either of opposition, or of unwillingness to ask for it. Seemingly the Bank has taken a stubborn pride in muddling through a crisis without this kind of governmental assistance, quite oblivious to the fact that a lifting of the restrictions of the Act would make possible a degree of assistance to the market that would undoubtedly improve public confidence. To an inquiry as to whether they wanted a relaxation of the Act in 1847, the Bank officials replied that they were "perfectly prepared to maintain the law." In 1866 Gladstone stated that "he had 'not the least reason to suppose' that the Bank would ask him to suspend the Act." The Bank was offered a Chancellor's letter by Goschen in 1890, but it was declined by Lidderdale, the Governor. This point of view reflects a shocking disregard or ignorance of the responsibilities of a central bank.

Sir John has not told us, and we cannot infer from what he has said, whether the Bank prior to 1914 ever evolved a consistent concept of its responsibilities or of the course of action which it should pursue. On the one hand, it clearly did come to the aid of the market during crises, and on occasions apparently tried to ward off impending trouble. Sir John tells us that in 1889 "the Governor and Court were watching the exchanges"; although one is left in doubt as to whether this is more than an inference, well-founded no doubt, if that it is. But was the Bank chiefly concerned with its own safety, or was it pursuing a policy which it believed would promote the public welfare? Quite probably there was a mixture of the two motives.

On the other hand, there was the attitude of Thomson Hankey, onetime Governor, who stoutly maintained that the other London banks should not look to the Bank in critical times; there was no public acknowledgement of its public responsibilities, nor has Sir John revealed any record within the Bank of any consciousness of such responsibilities; and there was the strange aversion to a "Chancellor's letter" during crises. An anonymous memorandum of 1830 to the branches, which was never sent out, states that bankers must not at that time (during an outflow of gold) expect help beyond the amount of their existing balances and discounts with the Bank. In 1899 the Inspector of Branches "wondered whether the Bank's dual position could be maintained. Was it to be 'duty to the public' and care of gold, or duty to the proprietors . . . and the dividend?" One infers that the Inspector was very definitely of the opinion that it should be the latter.

But granted that the Bank did realize its public responsibilities, there is no evidence that it ever formulated a policy for itself which went beyond the protection of its gold reserves and the maintenance of convertibility of the currency. I can find in this work no evidence in support of the assertion sometimes made that before 1914 gold standard countries were in fact on a sterling basis which was managed in London.

I have considered primarily the monetary policies of the Bank, but Sir John's work is not devoted so exclusively to this question. Indeed, my chief criticism is that he has not given sufficient consideration to matters of policy, although it may be conceded that in part the paucity of relevant material in the Bank records is responsible. There is much information on such topics as the organization and business of the Bank, the proprietors of Bank stock, the note issues, the relationships between the Bank and the South Sea Company and between the Bank and the bankers, the official personnel, and other topics. All this is written in a surprisingly interesting style when one reflects that the subject matter is such as to invite a presentation of deadly dullness. In fact, at times the narrative becomes almost entertaining—this, for example: "In this clash the chief antagonists were unequally matched, Bagehot with as good a head and as good a pen as any in England, Hankey with—well—neither."

We may, we should, recognize that the Bank of England has been a pioneer institution; that its officials have been men of affairs who have had thrust upon them duties for which they had training and knowledge only insofar as pertained to the routine operations of the Bank; and that the literature upon which they might have relied for quidance has likewise been in a state of immaturity and development. When we have recognized these facts we must concede, I think, that the Bank has had a most remarkable history, and that it has met its responsibilities with no mean measure of success. Nevertheless, we are not too uncharitable if we look with a critical eye, and even from the standpoint of knowledge not available to the officials of the Bank, upon its operations; and if we point to its failures and blunders in an attempt to increase our own wisdom in the management of our monetary affairs.

Unquestionably *The Bank of England* will become the standard work on its subject. It is a fitting opus to close a distinguished career. Sir John Clapham died on March 30, 1946.

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International Trade, Finance and Economic Policy

International Trade and Domestic Employment. By CALVIN B. HOOVER. Prepared for the Committee for Econ. Development. (New York: McGraw Hill. 1945. Pp. xii, 177. $1.75.)

This is the fifth of the research studies prepared for the Committee for

Economic Development.[1] The body of Dean Hoover's report consists of description and analysis of a program for the United States which in the long run would offer the best promise of a freer and larger flow of goods in international trade.

The study is primarily intended for the general reader, for whom it details and analyzes an array of measures for the implementation of a general policy which is widely subscribed to by American economists, probably by a large majority.

The study recommends a program consisting of the following elements: participation in both of the organizations proposed by the Bretton Woods Conference—the International Monetary Fund and the International Bank for Reconstruction and Development; securing international agreements for the elimination, insofar as possible, of international cartels and effective national and international regulation of those not found possible to suppress; lowering of our protective tariff in conjunction with reciprocal action by other countries and refraining from using the tariff as a means of protecting our war-born industries from foreign competition; settlement of Lend-Lease on a basis that would not disrupt the general structure of the international balance of payments; maintenance of only such of our merchant marine as is considered necessary for national security; and carrying out measures for attaining and maintaining a high level of domestic employment while collaborating in international policies that would promote high levels of employment in other countries.

All of the proposed actions have been extensively debated and some of them have been substantially carried forward by the United States government in the year since Dean Hoover's report was completed. Readers of the *American Economic Review* are doubtless familiar with more elaborate analyses of the proposed measures than Dean Hoover's report provides. It seems appropriate, therefore, that the remainder of this review be devoted to general aspects of his study.

In discussing the causal relations between the levels of United States foreign trade and domestic employment, Dean Hoover indicates that the main order of the causation runs from the latter to the former. The possible influence of the level of our international trade on domestic employment is not analyzed, notwithstanding that the title of the report suggests that this would be its main concern. The author presumably does not believe that the level of our international trade has a determinate influence on either the average level or the stability of domestic employment. The economic advan-

[1] The Research Committee of the Committee for Economic Development has issued a statement on national policy covering the same field as the report under review—*International Trade, Foreign Investment and Domestic Employment, Including the Bretton Woods Proposals.* Except with respect to participation in the International Monetary Fund, the recommendations of the Research Committee conform closely with those of Dean Hoover's report. The statement of the Research Committee recommended that certain functions of the International Monetary Fund as proposed by the Bretton Woods Conference be carried on by the International Bank for Reconstruction and Development, and that the establishment of the fund be postponed until more normal conditions of currencies and foreign exchange are achieved.

tages of a freer and larger flow of goods in international trade are attributed solely to the increased efficiency of production realizable from more extensive international specialization and division of labor. Dean Hoover properly refrains from arguing that increased foreign trade would make a dependable contribution to the solution of our problems of unemployment.

In line with the reasoning presented in the preceding paragraph, the report indicates that our policies in the field of foreign trade and finance are not major factors that will influence attainment and maintenance of a high level of domestic employment. Dean Hoover believes, however, that the adoption of measures that will assure a high and stable level of domestic employment is essential if the other elements in his program are to have substantial advantages for this or other countries. In fact, he finds that unless the prospect of depressions is eliminated, policies which contemplate freer and larger international trade are not likely to be adopted by other countries or long maintained here.

The study seems to the reviewer to be at its weakest in reference to the balance of payments problem. Though in some places it suggests doubt about the matter, on the whole it seems to imply that, if the United States and other important trading countries participate in the proposed international monetary and banking organizations, and if severe depressions are avoided, active and passive balances of international payments for this or other countries need not cause serious difficulties. It is to be hoped that this view may turn out to be in accord with the realities. The reviewer, however, is not confident that it will. The persistence of the active balance of payments position of the United States during the thirties may well have been attributable to economic factors which are not capable of easy readjustment. The value of our import trade may therefore not adjust itself more or less painlessly to provide foreigners with the dollars necessary to pay for United States exports and meet service on United States investments abroad. And this failure may occur even though the program recommended by Dean Hoover is pursued.

On the whole, it appears that the author simply assumes that our imports will expand in value commensurately with our exports; he does not examine whether that result is reasonably to be expected. The study does not analyze the question of what adjustments may be needed if the anticipated and desired greater exports from this country are to be maintained on an economic basis and the service on United States investments abroad to be met. Nor does it consider the procedures by which such adjustments if needed could be brought about—whether, for example, revision of exchange rates would be effective and feasible. An examination of this matter, which doubtless might not have led to assured conclusions, is probably not to have been expected in the type of study Dean Hoover undertook. Nevertheless, from the point of view of the reviewer, the absence of such an examination is a deficiency of the report.

L. A. Morrison

U. S. Tariff Commission

Commercial Policy in the Canadian Economy. By ORVILLE JOHN McDIARMID. (Cambridge: Harvard Univ. Press. 1946. Pp. 397. $4.50.)

In this work, the author not only presents the historical facts of Canada's commercial policy from 1763 to 1939, but also attempts briefly to analyze the effects of that policy on the economic and industrial development of Canada. While he emphasizes the tariff as the main instrument of trade policy, he by no means overlooks "such complementary techniques as subsidies, shipping regulations, and exchange and currency matters."

The history of tariff changes is presented in such minute detail that its reading may well befuddle, and will almost certainly bore, all except those interested in a highly particularized account. For them, the work is a welcome and valuable addition to the very limited amount of secondary material previously existent in this particular field of research.

The more general reader, interested chiefly in such aspects of the tariff as its regional incidence, its influence on the development and structure of Canadian industry, its contribution to monopoly and monopolistic practices, its effects on the national income and on cyclical and secular patterns of the economy, and its repercussion on Canada's external relations, will probably be content to "hit the high spots" and then concentrate on the last chapter where these problems are briefly touched upon.

Nowhere, at least during the present century, has the question of regional tariff incidence been fought over as bitterly as in Canada. The problems of war and wartime prosperity combined to shelve, temporarily, that conflict. Now that peace has been reëstablished on the external front, domestic harmony is again threatened as the recent Dominion-Provincial Conference fiasco showed. The facts that primary production in Canada is regionally and provincially concentrated and that the Provinces exercise considerable constitutional power over economic matters guarantee the continuance of a sectionalism that has bedevilled the country since Confederation. A perfect case in point was contained in the submission of the Province of Saskatchewan to the Royal Commission on Dominion-Provincial Relations: "While the tariff has given little support to the few small manufacturing industries which Saskatchewan does possess, it has imposed a heavy annual charge or tax upon the one great unsheltered export industry of the province. The Saskatchewan wheat growers have been compelled to purchase goods in an expensive protected market with the proceeds of exports sold in the competitive markets of the world."

The author admittedly attempts no final answer to the question of how the direct burdens and benefits of the tariff have been distributed among the various areas and provinces of Canada but contents himself with a cautious middle-of-the-road statement in the following words: "The view commonly held that individual incomes have been drastically reduced and standards of living lowered in eastern and western Canada because of the tariff is probably unfounded. The tariff, in its protective aspects, has had two important consequences to the economies of the Maritimes and western provinces. By increasing the cost of certain producers' equipment it has limited the

exploitation of marginal lands, mines, forests and fisheries. The result has been to reduce gross income and perhaps also to limit the population that the primary industries of these provinces can support. Secondly, the tariff has reduced the real incomes of the people of those provinces during periods of drastic price collapse in export markets, inasmuch as it has contributed to inflexibility of durable consumers goods prices. The terms of exchange have undoubtedly been weighted in favour of central Canada [Ontario and Quebec] by the tariff, more so in depression than in prosperity, but the quantitative extent of this disability, we believe, has not been as great as frequently assumed. The subject, however, awaits more specialized study." Let us hope the author, or another equally well equipped, will produce that study in the near future.

This reviewer agrees wholeheartedly with the author when he states that "the regional incidence and benefits of the tariff are questions fundamental to the preservation of national unity." That national unity is threatened today and the tariff is a basic factor in the situation. In a democratic state what people believe, regardless of its actual validity, is of the greatest political importance. The reviewer would gladly have foregone much of the detailed statistical material which abounds in this work in return for further enlightenment on the problems stated and for answers to the questions asked. Such a treatment of the subject would be widely read and might well have a salutary effect on the hot economic tempers prevailing in Canada today.

Mr. McDiarmid concludes, rather optimistically the reviewer thinks, that: "As in no previous period in the tariff history of Canada, the prospect for the solution of the fundamental economic problems of the Dominion without the aid of substantial barriers to the free flow of international trade appears to be economically and politically possible." It is true that Canada is now a creditor nation and theoretically should be prepared to accept an unfavourable visible balance of trade. But she may attempt to follow the policy of the United States during the twenties to have her economic cake and eat it too. Her manufacturers are both well organized and highly experienced in the art of tariff lobbying. The Conservative Party, historic defender of the higher tariff, recently has been in the political doldrums, lacking both a distinctive program and a solid following. It may seek simultaneously to acquire both by resurrecting its earlier stand on the tariff. Furthermore, Canada's basic exchange problem, arising out of her international trade, is the conversion of British sterling into American dollars. She must continue to export heavily to Britain and, if the difficulty of conversion continues, she may well seek to reduce her decidedly unfavourable trade balance with the United States through tariff action. While economic sanity is a necessity to the well-being of the post-war world, the mere necessity of it by no means guarantees its appearance.

The reviewer has already indicated his evaluation of the material in this work. Unnecessary footnoting further handicaps a style heavily encumbered with details. For example, why quote with appropriate footnoting such an economically banal statement as "At the time of Confederation Can-

ada was just beginning to emerge from the commercial into the industrial age" (p. 131)? And, in the absence of a formal bibliography, the inclusion in the index of authors referred to only in footnotes would aid the more specialized reader in his quest for material in the field. But these are minor flaws and detract but little from a work which has made an unquestionable contribution to knowledge of both the political and the economic history of Canada.

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Public Control of Business; Public Administration; National Defense

Over-all Report (European War). (Washington: The United States Strategic Bombing Survey. 1945. Pp. 109.)

The Effects of Strategic Bombing on the German War Economy. (Washington: The United States Strategic Bombing Survey. 1945. Pp. 286).

The United States Strategic Bombing Survey was established at the end of the year 1944, with ample means to make studies of every aspect of the effects of air bombardment upon the enemy systems. The conduct of the the Strategic Bomber Offensive by the RAF and the VIIIth and XVth US Air Forces, had been accompanied by lively controversy on a number of issues of policy and strategy. At the same time a prodigious volume of Allied resources had gone into the enterprise of destroying the enemy's power and will to fight. Fortunately some of those engaged in it foresaw the value that would accrue from a thorough and unbiased study of the effects of bombing.

The Survey had a table of organization providing for no less than twelve hundred personnel, including several hundred civilian specialists. Its Chairman, Mr. Franklin D'Olier, was responsible directly to the Secretary of War. The study had the highest of auspices, and was able to get in ahead of most other intelligence operations, thanks to its own planes and jeeps, and very energetic personnel. Altogether it was a remarkable enterprise, certainly the best equipped of those charged with analysis of a major phase of the war. Its field teams followed the armies into Germany and examined physical damage, studied private and government records, and interrogated individuals. The *Over-all Report* was issued at the end of September 1945 and the larger report on *The Effect of Strategic Bombing on the German War Economy* a month later.

The two studies under review here are remarkable documents. They are at present, and will probably long continue to be, the best presentations available to Americans on the scale and character of the war effort of Germany. Each of them reviews the impact of the bombing campaign against the priority target systems including aircraft, bearings, oil, rubber, and other industries. The *Over-all Report* includes summary data on a num-

ber of other aspects of the problem such as the weight of attack, the bombing of transportation, and on the effects of "area raids" in damage to life and property. The larger report on *The Effects of Strategic Bombing on the German War Economy* is concerned solely with the effect on war production, and to this end gives data concerning the German war economy comparable to the data now available on our own war production. Since the *Over-all Report* contains some data of great interest which is not covered by the larger one, anyone who wishes to study the German war economy should use both. However, by far the greater part of the information of interest to economists is contained in the report on *The Effects of Strategic Bombing on the German War Economy*, and this report will be the subject of the rest of this review.

This report makes available for economists the basic data on the German war production program. It would be hard to imagine anything more important for present and future economic thought than this. We had already adequate data on our own war production. But any two cases are far better than any one, since any two facilitate the identification of the essential as against the merely incidental features. The German case is probably the one most valuable for economists after the American, for it was the next largest.

It is a commentary on the age that production was, until the war, a branch of economics more cultivated by engineers than by economists. This was of course because of the "normal" prevalence of the condition opposite to that of wartime, that the financial conditions of the economy could not be taken for granted. Economists have been concerned with how to establish the preconditions for a high level of production. It was to this problem that J. M. Keynes devoted his thought, and his vigor in attempting to find a solution is the main reason for the high place he held in modern economics and for the appreciation of his work printed elsewhere in this issue of the *American Economic Review*.

The first reason for valuing the data on war production in Germany, or in any other country, is that it is to a high degree in contradiction of the expressed opinions of economists before the fact. This is not said in order to disparage economists. The point is the familiar one that new data which contradicts old theories has always been the source stimulus to further advances in thought.

It is worth while to recall what was thought of the German war economy from time to time in the recent past. Roughly, it is fair to say, the German arms economy was taken as largely a fraud until the fall of France. After the fall of France the signs were reversed, and those who had held that a totalitarian economy could not be efficient rang the alarms because it was efficient. This period in which the Nazi economy was overrated lasted until about the time of Pearl Harbor, for the simple reason that Pearl Harbor coincided in time with the discovery that Russia would not go down in a single campaign and that Germany was in for a long war on two fronts. Thereafter, economists who thought that the Nazi system had been at the

maximum stretch of effort since 1939 thought also that the ceiling must have been reached no later than 1941, so that there must be a decline in 1942 and 1943 because of materials exhaustion and bombing.

Actually, as the report makes clear, the German arms economy was at only a moderate level of effort until the time of Pearl Harbor, so much so, that the general level of munitions production was trebled thereafter. So far was it from the exhaustion of material resources that oil was the only material which became really short before the final stages of collapse. So far was Germany from the complete mobilization of manpower that even to the end of the war she made less effective use of manpower than did Britain. The anti-Nazi world had accepted Goering's old bombast about "cannon instead of butter." It had been pointed out that Germany had the advantage in war preparation of having caught the economy at the depression level, with all of the rise due to reëmployment going into arms. We now find that the German economy was in a very different position. As the report states, "... Germany entered the war with a 'guns *and* butter' philosophy which was continued well after the initial defeats in Russia." This was illustrated by the case of textiles, "By 1939, the textile economy of Germany was well prepared for war. The industry had fully recovered from the depression of the early 1930's and the wardrobe of the German people was probably at an all-time peak."

The sharpness of this contrast between our idea of the German economy on the one hand, and the German economy as now revealed, was not true for public or popular economic thought alone. It continued to affect Allied intelligence throughout the war, and the report finds frequent occasion to comment adversely upon this fact. On the second page of the report there is mention of the fact that Air Marshall Harris had a low regard for economic intelligence, and that this influenced him in deciding in favor of area bombing as against "precision" bombing. At another point it is pointed out that a certain study was far from accurate in assessing the number of machine tools in Germany. In this particular case, Allied intelligence was better than the record implies, for the report in question was criticized by a number of agencies informally, although no other formal study was prepared in order to present the contrary data. But the report is correct in the numerous other cases mentioned and many more could be given.

The fundamental reason for all of the bad guesses, both public and official, was that war production in the leading belligerents was operating on a scale outside of any familiar calculation. This was the cause of efforts made in both the United States and Germany to devise new statistical measurements by which to keep track of what was happening. In the United States this felt need led to the use of a "war production" index, and to efforts to adapt the peacetime concept of gross national product to wartime application. In Germany, thanks to a single enthusiast named Rolf Wagenfuehr, an index series was set up for "munitions production," covering aircraft, ammunition, explosives, weapons, panzer and motor vehicles and naval construction. The report criticizes this index as a rather rudimentary one, and also for the base period chosen. The criticism seems scarcely well taken, for

the group of products in question throws a sharper light on the intensification of effort than any broader list could do, and the base period is set at the true time of transition from a semi-war economy to a full one.

The contrast between the Spartan impression and the rather flabby reality of the Nazi economy before Stalingrad is readily explained. In the first place, there is the clear evidence that the Nazis did not in fact expect to fight a big all-year war. Secondly, in consequence of this the resistance to serious sacrifice was always superior, politically, to the claims of the war managers. "Suggestions that a plant be closed met the opposition not only of the management but also very often of a politically potent gauleiter, who assumed responsibility for the immediate interests of his area." Thirdly, the control system was never developed until 1942 and later simply because it was not seriously needed. "It must be emphasized that throughout this period the German economy met the limited demands placed upon it, not only without evidence of strain, but also without controls. The Wehrmacht supply offices were, until well into 1942, Germany's only war mobilization agency and exercised power only over munitions-producing enterprises." Fourthly, there is positive evidence that the German military leaders were singularly inclined to abnegation in the matter of demands for weapons and ammunition. "The impression they leave is that . . . they were perfectly satisfied with what they had, no matter how little it was. . . ."

The immediate implication is that the potential scale of the war was so far out of previous cognizance that it could move up not in one step, as we felt that it did, but actually in two. The Nazis, even in their casual way, raised the level so high that the world was astonished in 1940, yet Russia and the United States again moved it so much higher that the Nazis in turn were astonished.

The nearest thing to an explanation offered for the increase in German munitions production after 1942 is to be found in the figures offered for employment in industrial work for the armed forces, which increased from 5.6 millions in May 1942 to 6.6 millions in May 1943 and to a lesser extent continued to increase into 1944. This is obviously insufficient by itself to account for the increase. It is the more surprising therefore that the report disposes of the German program for labor efficiency in war industry in a single paragraph on page 37, which states only that, "Finally, there were numerous attempts to increase the utilization of labor power by increasing labor efficiency. During 1942 it is reported that the government proceeded to comb out inefficiently used manpower, applying output per man-hour as a test. Unfortunately statistics on this subject are not available." Actually this is an instance where American intelligence as far back as the end of 1943 was superior to the report, for there were reports prepared at that time which demonstrated how elaborate and intensive were the German measures, both on the side of increasing the skills of labor and in reducing the skills required for specific industrial operations.

In addition to the picture of the German economy, there is of course also a picture of the effects of bombing. The impression given to at least one reader is a depressing one. The bombing of oil in 1944 had a very definite

and drastic effect on the capacity of Germany to fight. The enormous attacks on transportation in the winter of 1944–45 caused a general breakdown in the shipment of coal and in all war industry. Otherwise the main accomplishment of the whole strategic bomber offensive was the bringing of the Luftwaffe to battle and its defeat. The bombing killed several hundred thousand people and injured hundreds of thousands more (the report offers only a rounded estimate for the numbers), and destroyed the cities of Germany, with only a small effect on the power of Germany to fight. The report further confirms what was already known to the well-informed, that so-called "precision" bombing was actually much like what the layman thought of as area bombing. But since there will never be another war fought with the equipment of 1940–45, it is perhaps of little value, even for military purposes, to examine the questions concerning the use of resources which arise from the apparent wastefulness of air war, for both sides.

There would be little point in venturing into broader criticism of the report. It would be nice to know many things which cannot be known. We will eventually know more than we do now, because the data now available will permit some calculations not yet made. The prime value of the accurate data on any one of the great war economies is in setting the scale accurately so that we can correct our innumerable hard-dying misimpressions.

There are a few minor points, however, on which the report might have been improved. As might be expected of a report prepared by a considerable group, it is of uneven quality. The section on the Light Metals, Nonferrous Metals and Ferro-alloys shows a vagueness which implies a lack of familiarity with the problems involved. The section on Iron and Steel is badly written. There are two charts on page 180, each having a line for munitions production, but with slight differences in the two lines which should be identical. The chart of Total Available Product on page 22 is difficult to interpret because neither the area nor the statistical basis is defined clearly. On page 95 it is stated that stocks of coal "in the Ruhr had fallen to 3,000 tons at the end of September." The figure is too low to be significant if accurate, and is probably inaccurate. On page 100 it is stated that "a substantial part of the Swedish (iron) ore is non-phosphoric." Only a small part is strictly non-phosphoric, although a large part is of low phosphorous content. Table 62 on page 109 indicates that Germany had no domestic production of manganese in 1938, which obviously ignores her large domestic production of Spiegeleisen. Table 63 on page 110 indicates a consumption of molybdenum far beyond any level actually attained. Table 64 on page 111 is nearly valueless, and does not wholly conform to Table 63 or to Appendix Table 83.

All of these faults however are as fly-specks on a body of facts. An understanding of production is indispensable to the solution of all our problems, and this can be attained only as war production comes to be understood in all of its conditions. The report marks a stage in the dispersal of the fog of war.

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Industrial Organization; Price and Production Policies; Business Methods

Profitable Labor Relations and How to Develop Them. By PAUL MOONEY. (New York: Harper. 1946. Pp. xi, 209. $2.50.)

Mr. Mooney, who was formerly General Manager of Public Relations and Personnel for the Kroger Grocery and Baking Company, is presently engaged in independent management counseling work. In this book he sets forth his ideas concerning how management may formulate and administer a program for getting more in return for its wage dollar.

Mr. Mooney's main thesis is that management must replace its negative and defensive approach to labor problems with a positive program of leadership if it is to raise the efficiency of its labor force to a satisfactory level. This may best be accomplished, according to Mr. Mooney, by means of effective training throughout the organization.

One of the points most effectively driven home is the importance of developing among the employees a feeling of participation in the business, and consequently a true sense of the importance of their activities to the welfare of the company. Not only will this tend to keep their interest at a high pitch, thus increasing the information which they will absorb during the training program, but their own ideas, which they will then tend to offer more freely, can also be of great value to the company. Mr. Mooney has great respect for the fairness and intelligence of the average employee, regardless of his or her position in industry. When employees are given a chance to participate in solving the problems which concern them, a bridge may be thrown across the gap which has tended to separate management from the average worker as business has become larger and management, as a result, more specialized. These ideas are not new, of course, but they are set forth in a refreshing manner. There can be little doubt of the importance of repeated education in such matters if a greater volume of goods and services *per capita* is to be produced in the modern industrial democracy, as well as if, for less tangible reasons, the world is to become a better place in which to live.

A number of check-lists are presented in various parts of the book to help management develop the abilities of employees and secure their fuller contribution to the success of the business. These check-lists, and the discussions concerning them, contain much food for thought. For example, six factors are said to determine how ably an employee does his job, as follows: "(1) The character and ability he brings to it; (2) The nature of the work; (3) The way he is introduced to his job; (4) The reward he gets for his performance; (5) The opportunity he is given; (6) The leadership he receives." (p. 9). Although the importance of each of these factors is obvious, how often do we find a company which gives them adequate attention?

The numerous valuable ideas in this book could, in a number of instances, have been presented more effectively. For example, a great deal is made of the fact that a program of training checkers in a grocery store led to a large increase in their production and to a large reduction in the errors they made.

To what extent, however, were these beneficial effects permanent? Mr. Mooney's statements that these improvements had continued would be fully convincing only if they had been substantiated by a more thorough analysis of follow-up procedures used and of the results obtained over a period of time. Since it has frequently been observed that one of the hardest tasks in industrial relations is to make good results outlast the novelty of the experiments which may have led up to them, the durability of Mr. Mooney's results as he states them could legitimately be questioned by the skeptic.

The book contains a number of rather loose generalizations. For example, industrial engineers would be rather startled to read: "Thus far no one has devised an accurate method of measuring what a worker produces in comparison with what he could produce if he gave his best efforts to the work. Consequently, in the absence of any method of measuring actual output in comparison with potential output, the performance the employer gets is just what the employee chooses to give" (pp. 190–191). In some lines of work, of course, measurement of actual *versus* potential performance is difficult if not impossible, but quite accurate means of measuring the level of performance have been developed for many routine jobs in industry.

To sum up, while the ideas in Mr. Mooney's book are not new, in general they would seem to be fundamentally sound, and few would doubt the need for more education in their validity. Although the book is stronger in insight than it is in analysis, its shortcomings may well be overlooked for the benefit of being exposed to the industrial relations wisdom to be found beneath a somewhat rough exterior.

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Economic Geography; Regional Planning; Urban Land; Housing

La Localisation des Diverses Productions: Règles Rationnelles Déduites de l'Expérience. Bibliothèque Générale des Sciences Economiques, No. 18. By LAURENT DECHESNE. (Brussels: Les Editions Comptables, Commerciales, et Financières. 1945. Pp. 239).

In this book Professor Dechesne has given us results of a lifetime of research in economic and historical geography. His aim is to set up a theoretical framework adequate to explain the locations of all branches of economic activity at all stages of historical development, with a minimum of abstract deduction and a maximum reliance upon observed facts.

The book fulfills this promise. Though often superficial or erroneous on particular points, it is valuable as a synthesis. For breadth of treatment it is probably unequalled in this field. The approaches of the geographer, the economist, the sociologist and the historian are skilfully integrated. Economists will learn from this book a great deal about the relations of these other disciplines to their own, at the same time finding the author usually enough of an economist to retain their respect. It is recommended reading on this basis to any economist, though it will naturally appeal most to those in-

terested in regional development, population distribution, and interregional trade. Its application to all stages of economic development, and the wealth of historical illustrations, will commend it to students of economic history. The examples are drawn from all parts of the world, though Belgium and France naturally figure most often.

In an opening chapter the author lays bare the limited applicability of certain earlier approaches to location theory, including Thünen, Alfred Weber, Sombart, and the geographers. He correctly notes that the geographers have generally overestimated the role of natural resources and underestimated the role of human techniques and relations, on account of their inadequate knowledge of social sciences; while the economists have mainly restricted their interest to international trade or to elaborating highly abstract and incomplete theoretical structures like those of Thünen and Weber.

Unfortunately, Dechesne overreaches himself here. In his anxiety to establish the unique character of his own work, he is unfair to several of his predecessors, and betrays an inadequate knowledge of their contributions. One of his counts against Thünen, for example, is that the existence of navigable waterways is ignored. Actually the Isolated State was equipped, in one of its versions, with such a stream. Much more serious is Dechesne's complete ignoring of Ohlin and E. A. G. Robinson, and his dismissal of Palander and Lösch in a couple of sentences, which strongly suggest he has never really read those authors. It is fair to say he is fifteen years behind the times in the literature of locational economics. I do not feel competent to appraise his appraisal of the sociologists, historians and geographers, but note his failure to mention, for instance, McKenzie's work, or Whittlesey's *The Earth and the State*. Nor is there any reference to a number of statistical and policy studies from the United States and Great Britain which were available before the War. This inadequate digesting of other literature, to be sure, makes Dechesne's actual achievement the more remarkable.

The author lays stress on the basic distinction between production advantages (primarily labor and energy costs) and transfer costs, with the latter category subdivided into costs of assembling materials and costs of distributing the product. An unusual and praiseworthy feature is his emphasis on elements of transfer cost other than transportation, which assume great importance in the case of luxury goods, "shopping goods," or other differentiated products and, on account of the small scale of transactions and the personalized character of trade, at the final stage of distribution to the consumer.

His treatment of the extractive industries, which are tied directly to the natural resources they exploit, is conventional. He recognizes that access to market (and in certain cases, access to sources of transported materials such as fertilizer or mine supplies) determines the extent to which various resources will in fact be exploited; but concludes that "Nature" (the distribution of resources) is still the dominant locational factor for this type of activity.

Industries representing early stages of production are likely to be oriented

to the extractive industries as sources of materials, on account of the usually considerable degree of weight- or bulk-reduction involved. As goods advance through subsequent stages of production toward final consumption, they become more valuable per unit of weight, hence more "transportable"; so considerations of transport cost have less weight and the patterns of such industries are increasingly responsive to differentials in costs of production.

This last principle is repeatedly emphasized. It is supported, however, only by the reasoning just cited and by a number of selected examples. Surely this is a point on which more penetrating analysis and some comprehensive statistical inquiry would be desirable. It does seem reasonable that the big reductions in bulk, weight or perishability of goods tend to be made at the earliest practicable stage of production, while subsequent reflations —*e.g.*, the adding of water to beverage extracts—tend to be delayed to the latest practicable stage. This means that early stages are more likely to be material-oriented and late stages market-oriented. But the increase in "transportability" is a slippery notion. It seems to reflect the relation between value per ton (say) and the cost of shipping a ton over a unit distance. Where the manufacturing process makes the material a good deal more bulky (as furniture factories and bottling plants do), the ton-mile costs of shipment on the product may increase more than the unit value. In any event, the most appropriate indicator of the sensitiveness of an industry to production-cost differentials would appear to be the value added by that stage of production, not the total value of the materials at that stage. I see no reason why value added must be greater in later than in earlier stages of production.

Dechesne often seems to slight the factors making for market orientation. He concedes only that such orientation may arise when commercial contact considerations (the non-transport elements of distribution costs) are predominant, or in a few "exceptional" cases where products are very difficult to move. Surprisingly, however, he illustrates this latter category by referring to ships and locomotives. Surely self-propelled vehicles are the easiest possible type of product to deliver! (Elsewhere the author himself refers to the relative ease of raising livestock at a distance from markets, on account of their ability to carry themselves to market.)

The discussion of transfer costs could have been improved, without undue loss of generality, had the author inquired into the internal economics of transport and communication as such. He does recognize the economy of water routes as against land routes, and railroads as against earlier methods of overland transport. Once or twice he mentions the factor of cheap return hauls. But such important and inescapable factors as the existence of terminal costs, the economies of dense traffic, and discrimination against "more transportable" goods (meaning here, let us say, those with lower elasticities of demand for transportation), are ignored in the analysis. The first two are important concentrating factors, while the third offsets, to an undetermined extent, the locational effects which Dechesne attributes to the increase of unit value of goods as they pass through successive stages of production.

The treatment of the gradual separation of early-stage processing of

agricultural products from the farm, under the influence of improved transport and large-scale production techniques, is illuminating. It is pointed out that those operations which remained most tenaciously attached to the farm are the ones with low skill requirements or a high degree of weight loss, and those yielding bulky by-products useful on the farm.

Dechesne's category of "transforming industries proper" excludes the first processing of agricultural materials and also the "heavy industries" which work with crude mineral products. More responsive to production-cost differentials, the transforming industries are located more and more with respect to labor supply and energy costs, as the cheapening of transport diminishes the importance of materials and market factors. In medieval times, an adequate free labor supply was found only in the towns; but the restrictive practices of the gilds raised labor costs and prevented manufacturers from introducing improved methods, bringing a general exodus to the countryside. The development of water-power machinery brought these rural industries from scattered households to waterpower sites, and the later development of steam power further concentrated them where fuel was cheap, in the new industrial cities of the Industrial Revolution. (Dechesne properly indicates that the contemporary "Transport Revolution" was really what made concentrated mass production, urbanization, and the world economy of the nineteenth century possible.)

In a chapter dealing with "production advantages peculiar to the industry," the author introduces the concept of "derived" factors of location—that is, advantages or disadvantages created in a community by the presence of the industry itself. An established location, by virtue of the "derived factors" of trained labor, commercial and financial facilities, and fixed plant, possesses a strong inertia, which keeps such locations in business long after the originating factor is obsolete. On the other hand, the author sees a general tendency for the labor supply in concentrated production centers to go in for restrictive practices which (as in the case of the medieval gilds) provoke a flight of industry.

A conclusion of general interest is that industry as a whole is now ruralizing again, and that cities will decline in importance. Though the effect of cheaper and better transport is to make possible an increased concentration of *any one* industry, the agglomerative factors accounting for cities can be resolved mainly into costs of transfer and contact, labor efficiency, and energy costs. Improved means of transport and communication loosen the first of these ties; the loss of initiative and productivity of urban labor, and its reliance on restrictive cost-raising tactics, plus opportunities for introducing labor-saving machinery in rural locations, remove the second factor of urbanization; and the use of transmitted electric power equalizes energy costs through the countryside. Therefore, concludes the author, we are progressing to a new ruralization of industry, especially evident in the United States.

The only fact-finding investigation cited in support of this radical conclusion is that of Daniel B. Creamer.[1] A more careful reading of Creamer and

[1] *Is Industry Decentralizing?* Study of Population Redistribution, Bulletin No. 3. (Philadelphia: Univ. of Pennsylvania Press. 1935.)

of subsequent studies would have made it clear, however, as Dechesne does not, that the "decentralization" trend in American manufacturing industry is mainly a spreading-out of major industrial communities, best described as "suburbanization." For population as a whole, there is still less evidence of any ruralization trend beyond that involved in the internal rearrangement of metropolitan areas.

In a chapter on the locations of industries of different intensities, Dechesne expounds soundly the general principle of combination of productive factors in variable proportions according to their relative prices, and shows that the adjustment of the labor-capital ratio in industry is basically akin to the adjustment of land-use intensity in agriculture. Little is added, however, to previous developments of this subject. It is demonstrated by example that intensity of land use varies with density of population. With high intensity and density we find an increased proportion of farm tenancy, and as a result less energetic and less efficient use of the land. On the other hand, very low densities and intensities are the basis of latifundiary exploitation, which is likewise inefficient and retards progress toward more intensive uses.

The whole discussion of intensity of land use deals with agriculture. A surprising lacuna in this book is the omission of any discussion or even mention of the structure of cities.

The adverse effects of locational shifts upon the economy of some regions is briefly handled, primarily with reference to the effects of improved transport in extending the sphere of geographical specialization (in Dechesne's terminology, widening the "domain" of location). The "structural crisis of the nineteenth century" is ascribed to the competition of New-World agriculture with that of Europe as a result of improved transport. Europe adapted herself by further specialization in industry (and by protection), but a new structural crisis now manifests the desire for industrial self-sufficiency in the erstwhile "new countries." We have now entered a period of nationalistic trade restriction, particularly serious for small countries like Belgium.

Belgium abandoned her early quality industries during the Industrial Revolution because she was so well situated to participate in the world exchange of standardized commodities. To weather the period of international trade restriction, she must learn from Sweden and Switzerland, which kept and developed their high-quality specialty export industry primarily because they were at a relative disadvantage in the production and marketing of the cheap staples. The author is optimistic here, seeing Belgium well on the way to the necessary improvement of production and merchandising techniques.

The author's views on public policy have already been more ably expounded by Adam Smith. Dechesne refuses to admit governmental action of any kind into his theory, on the ground that it is inherently irrational and unsystematic, therefore incapable of being theorized about. A brief chapter, however, recites the failure of various protective schemes and state enterprises. All the protectionism of the nineteenth century, so far as he has been

able to discover, failed to start a single new industry in any country.[2] He concludes that *any* kind of government action is generally harmful in its locational effects and that only if it happens to ride the wave of fundamental "economic conditions" may it be innocuous or slightly helpful.

In an encyclopedic work of this kind, one should not expect perfect accuracy. But this book is so strikingly slipshod in matters of detail that the reader must watch his step. A spot check of the bibliography and notes revealed errors in about one reference in eight. A. P. Usher, for instance, is invariably referred to as either "Payton-Usher" or simply "Payton." The illustrative cases from American and also British literature are also so often incredible that one can only hope Dechesne is more trustworthy on his home ground. Thus we learn that the American steel industry is rapidly migrating to the shores of Lake Superior; that there are seven New England states; that cheap electric power is reviving rural household industry in the United States; that Welsh coal can reach London only by rail; and that the manufacture of farm implements in the United States was concentrated in the cereal belt, at Ipswich. In some other places, this reviewer was able to reconcile a sentence with its context only by supplying an omitted negative.

Despite its shortcomings, the book should be widely read, as a valuable contribution to the broader understanding of economic geography.

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Labor and Industrial Relations

Labor Policy of the Federal Government. By HAROLD W. METZ. (Washington The Brookings Inst. 1945. Pp. ix, 284. $2.50.)

This valuable study refutes the common assertion that the federal government has no labor policy, or at best a vague and vacillating one. Mr. Metz points out that federal labor legislation has consistently aimed at improving the economic and social lot of the working classes. Thus the purpose of the Department of Labor was declared to be "to foster, promote, and develop the welfare of the wage earners of the United States, to improve their working conditions and to advance their opportunities for profitable employment." The scope of federal labor legislation, prior to the Roosevelt administration, had been rather limited, partially due to judicial interpretations of federal powers. With the advent of the Roosevelt administration, aside from the existing Norris-La Guardia Act which was a foreboding of the nature of future laws, there came a mass of labor legislation, frankly designed to aid and assist labor while at the same curbing and eliminating many of the "rights" of management. Paralleling this legislation there developed a markedly sympathetic attitude on the part of the Supreme Court for labor's "rights."

The author portrays three stages of the public attitude toward collective

[2] At another point he states, without explanation, that this protectionism extended the "domain of location" (*i.e.*, aided geographic specialization)!

bargaining, namely, suppression, toleration and encouragement. This is shown by the evolution of the workers' rights to organize, and protection by federal criminal penalties and administrative remedies against employers who violate these rights. The official encouragement of union organization is traced through the Railway Labor Act, the Norris-La Guardia Act, the National Industrial Recovery Act, the National Labor Relations Act, and the policies of the War Labor Board. Attention is directed, by legal citations, to restriction of the employer's right of free speech lest it be construed as coercion of employees, and to the various interpretations of the unfair labor practices prohibited by the National Labor Relations Act. Attention is also given to the unfolding of unlimited rights to strike, regardless of the purpose of a strike, to the virtually unlimited right to picketing under federal law, to the acceptance of most all kinds of labor boycotts, and to the shrinking legal responsibility and liability of unions and their members.

The employer's obligation to bargain collectively under federal legislation, and the power of administrative agencies to influence the terms of the collective agreement are carefully treated. Under the Railway Labor Act collective bargaining need not result in agreement, thereby offering no opportunity for governmental dictation of terms. But the War Labor Board assumed the power to prescribe the terms to be included, and the National Labor Relations Board may indirectly influence the terms by declaring an employer's failure to grant "desirable" demands of the workers or his insistence on "undesirable" terms as a refusal to bargain collectively.

An extremely meaty chapter is that on union organization, in which the author delineates the influence of the federal government upon the organization of the American labor movement. Mr. Metz states that the federal government has "favored the development of large bargaining units, and it has encouraged unions that are affiliated with the A. F. of L. and the CIO while discouraging independent organizations." As to the two objectives of the National Labor Relations Act—protection of the worker's right of self-organization and the increase of labor's bargaining power, the author shows that the Board generally gives chief consideration to the latter.

The present policy of the federal government is described as promoting the closed shop and other forms of union preference, except in railroad transportation where the law, through the influence of the railway unions, has prohibited the closed shop. The closed shop and other forms of union preference are pointed to as facilitating inter-union warfare. Federal policy does not extend to the protection of the individual worker through control over the admission or expulsion of members from the union organization, nor through assurance to the nonunion worker that collective bargaining by the union will even consider his interests.

The government from 1933 to the present has found itself playing a dual rôle with respect to wages, mostly to increase wages, but at other times to prevent them from going too high. Direct and indirect devices have been used to carry out these policies. The direct method has found favor in the form of minimum wage laws, and in the war period through making wage changes subject to government approval. In the various federal attempts

to regulate wages directly, Metz indicates that the government has failed to develop and apply objective standards of determination. He feels that, although this may have proven advantageous to labor so far, the same wage machinery in the hands of unsympathetic administrators could be operated to labor's disadvantage. The federal criteria for regulating the hours of labor are varied—to reduce unemployment, to increase wages, to increase purchasing power, and to promote safety, while regulation of child labor was justified as a means of preventing their exploitation and eliminating a wage depressant.

The author discusses at some length the settlement of labor disputes and the adjustment of wartime labor disputes. In his concluding chapter he summarizes the major trends of the federal government's labor policy.

This work presents a concise, clear-cut analysis of the entire federal labor policy. It is well documented throughout, and is strikingly clear of bias. In the reviewer's opinion it is a book which the student of labor legislation or labor problems has sorely needed.

EARL E. MUNTZ

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Industrial Relations and the Social Order. By WILBERT E. MOORE. (New York: Macmillan. 1946. Pp. xii, 555. $4.00.)

Professor Moore set a high goal for this book. He has undertaken, in a textbook, to consider as a single whole the material usually treated separately as corporation management, personnel administration, labor relations, as well as theories of capitalism, social psychology and other things. He has sought, as he points out in his preface, to describe and explain "the functioning of the structure as a whole." Such a venture deserves success. But success requires more knowledge, more sense of selection and emphasis, more penetrating understanding than most men have.

Such an undertaking could be considered successful on two grounds: either that it provided a clear effective summary of massive and widely scattered material, or that it provided new (or even useful) insights. Professor Moore's book does neither. For most readers, more concrete and specific summaries are provided elsewhere, if not in one volume, at worst in three or four.

The job is made even more difficult for this book by the transposition into sociological terms, when so much of the basic material is written by lawyers and economists. Although the author sought to direct new light on the problems of society and industry by using the devices of sociology, most of the source material on which he depends does not fall easily into the sociological categories. The result is confusing, rather than enlightening. Too often the writing becomes unremittingly abstract and general, and the sociological approach seems at times to be little more than embroidery of the obvious.

The range of subject matter in the book is so broad and varied that only the most powerful adhesive thinking could bring a real sense of integration.

The insights which might illuminate the relations between the various fields covered by the book are not there.

The scope of the book is indicated by the titles of its main parts: Development of Modern Industry; Industrial Organization: Management; Industrial Organization: Labor; Industrial Relations; Industry and Society.

The first Part is an effort, in less than forty pages, to block out in broad strokes the origins of modern industry, its relation to inventions and technology, and its dependence on the theory of "individualism." The discussion of Industrial Organization: Management is a review of the character and organization of modern industrial management; how organizations are charted, the division of functions, and the disparities between formal and human relations.

The Part on Industrial Organization: Labor is something of a rag bag of subjects. The sources of labor supply and a list of wastes of labor resources are reviewed at some length. These chapters, however, do not discuss our extraordinary experience with the wartime labor market which seriously stretched some of the old ideas of the way the labor force is limited by the numbers and skills of workers. Since Professor Moore later says he thinks that we need economic planning for full employment, it would have been desirable to consider the only substantial experience this country has had with the way the labor market acts when there are more jobs than workers. Probably even more appropriate would be an extended discussion of the techniques of occupational analysis and placement. The war experience showed that the way each employer hired and used his labor was more important in setting the limits of manpower for production than any theoretical limit in the total labor supply. In the past few years there have been developed techniques in this field which ought to be more widely known and used.

The rest of this Part sketches the results of some of the studies on the effect of fatigue and routine on machine workers. There is described, perhaps with more conviction than the state of knowledge justifies, the motives workers have for working. He says, "that the goals appearing to be dominant in the worker's orientation to his job are *security, pleasant working conditions, and status in a competitive society.*"

In the Part on Industrial Relations, summary treatment of labor organization, collective bargaining, and industrial conflict is undertaken. The significance of such treatment, of course, depends upon the points which are emphasized. The discussion of collective bargaining, for example, deals at length with the operation of the National Labor Relations Act and the interpretations that have been put upon its provisions, but not at all with the economic and political significance of the wage bargain. One does not need to have gone through the explosive struggles over wages in the past six months to decide that the bargaining on, for example, the common labor rate in the steel industry entrains in its wake industry-wide and nation-wide economic and political consequences. In a similar fashion, the treatment of industrial conflict will not satisfy those who want help in thinking about consequences of recent industrial struggles.

Although it must have been intended to weave throughout the entire treatment of the book a consideration of the social impacts of industry, most of the discussion of this aspect is tied to the end of the book in a final Part largely unrelated to the early discussion. The prospects and problems of economic planning are touched upon in a final chapter with the conclusion, certainly not to be drawn from the context, that some form of economic planning by the government must be undertaken.

Professor Moore has provided extensive and useful bibliographies with each chapter. They reveal how great and variegated is the knowledge which the social and economic philosopher must bring to the study of industrial relations and the social order. Any student who undertook to read through the listed books would have a rich background in a number of subjects.

The project which Professor Moore undertook was a very worthy one. Though the book has not met the demands of its grand scheme, certainly one reason is that the undertaking was so ambitious. If the book stimulates others to think and write about the ways in which management practice and industrial relations interlace and, in turn, affect community and social relations of people, it will have been more than justified. Too much industrial administration and too much collective bargaining today is undertaken without regard for the social consequences.

RALPH D. HETZEL, JR.

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Collective Bargaining. By LEONARD J. SMITH. (New York: Prentice Hall. 1946. Pp. xiii, 486.)

This book is not concerned with the social, political, or economic significance of collective bargaining. Its purpose is to present certain fundamentals that will be helpful in negotiating and administering collective bargaining contracts. To this end the material is organized in three sections. The first deals with the nature of collective bargaining from the standpoint of the conceivable bargaining units involved, the likely attitudes of the parties toward collective bargaining, and the possible objectives they may be seeking through drawing up a labor agreement. This is then followed by a section that considers the problems of actual negotiations in terms of the procedures that may be followed and the tactics that may be employed by the negotiators. This section contains some helpful suggestions in regard to ways by which the conduct of negotiations may be smoothed.

The last section constitutes the major part of the book. It attempts to take the labor agreement and to consider all of its possible major individual provisions. These the author believes can be grouped around eight major headings: union recognition, wages, working time, conditions of employment, management rights, seniority, day-to-day relations, and, lastly, certain formal provisions in regard to the purpose and duration of the contract. After commenting on each major topic, the author proceeds to consider the various provisions that it is likely to take in the collective bargaining contract. An especially noteworthy feature is the construction in connection with each provision of the labor agreement of a check list which

quickly brings to light all the important items that may require specification in connection with the provision if confusion is to be avoided.

The remainder of the book consists of a glossary of labor terms, a description of the important private, public, and labor research organizations which furnish information that may be of use to negotiators, and a select forty-three page bibliography of books and articles on collective bargaining with discriminating comment in regard to each item. The book concludes with a series of appendices on Industrial Jurisprudence, Illustrative Labor Agreements, and Specimen Labor Agreement Clauses. The 117 pages of illustrative labor agreement material would be more useful if an index or even a mere table of contents were furnished.

A. MORGNER

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Labor in the Philippine Economy. By KENNETH K. KURIHARA. Issued under the auspices of American Council, Institute of Pacific Relations. (Stanford University: Stanford Univ. Press. Pp. xv, 97. $2.00.)

This brief book is a semi-popular treatment of the position of labor in the Philippine Islands in the pre-war years. Philippine labor problems are conditioned by the fundamentally agrarian and colonial nature of the Islands. Much of agricultural production is carried on under a share-cropping system, while ownership of land is highly concentrated. Industrial production "has not yet outgrown the handicraft stage" (p. 9). "Economic dependence on the United States . . . largely accounted for the immature growth of native industry" (p. 10).

In his account of the history of labor organization, the author says, "Trade-unionism had not yet reached the broad masses in the Philippines in 1941" (p. 69). At the end of 1940 only about five per cent of the gainfully employed workers, industrial and agricultural, were organized and less than two per cent in registered labor unions. Labor organization is also hampered by factionalism. The author is sympathetic toward further organization of labor as a means of raising the standards of Philippine labor. He is also sympathetic toward the "Social Justice" program, in many ways the Island counterpart of the New Deal.

This reviewer would have liked to have seen a more thorough examination of the implications involved in the imposition of a "social welfare" program upon an economy in the early stages of capitalist industrialization.

FRANCIS S. DOODY

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Population; Migration; Vital Statistics

Economic Demography of Eastern and Southern Europe. By WILBERT E. MOORE (Geneva: League of Nations. 1945. Pp. 299. $3.00.)

This book is the second of a series to be prepared for the League of Nations by the Office of Population Research of Princeton University. The

first was the important work published last year under the title, *The Future of the Population of Europe and the Soviet Union*. These publications represent the beginning of an extended program of research undertaken by this organization for the League.

Essentially, this study deals with the problem of rapidly growing population in agricultural countries with few or meagre resources. In contrast to the relatively prosperous and industrial countries of northern and western Europe, in which population is increasing but little or is actually declining, this volume shows the poor relation of men and resources and the large potential growth in agrarian countries of eastern and southern Europe. The countries studied fall into two main groups: (1) eastern and southwestern Europe exclusive of the Soviet Union (Estonia, Latvia, Lithuania, Poland, Czechoslovakia, Hungary, Rumania, Yugoslavia, Bulgaria, Albania, and Greece); and (2) the southwestern Peninsulas (Italy, Portugal, and Spain). Not counting the Soviet Union, approximately one-half of the people of Europe live in these areas. Projected population figures for these countries for 1940–70 show very substantial increases in numbers. Also in contrast to the more highly developed and industrialized nations of northwestern and central Europe, these countries are largely dependent upon agriculture. This fact is extremely important in any population study. Although these general facts have been well known, Moore has made a significant contribution in attempting to deal with the entire and complicated problems which will prove to be so important not only to the welfare of these peoples but also to the peace of Europe.

Moore shows the low productivity *per capita* in agriculture in those areas where the need is the greatest. In order to do this it was necessary to work out a basis by which some comparison between the various countries could be made. The quantity of each commodity grown was "given a standard weight that reflects the typical or modal exchange ratio between that commodity and the crop basket" (p. 31). The value of production in crop units was then related to persons dependent on agriculture and to male workers engaged in agriculture to make some approximation of the relative income of the agricultural population. The effectiveness of the use of land was studied by production in crop units per hectare of agricultural land. The relative poverty of the southern and eastern areas is clearly brought out by these data. The author also attempts to show that most of these countries already have surplus population. This computation is based on the assumption that any number in excess of that necessary to produce the production of the average per capita for Europe is surplus. France is also used as a basis for comparison.

There follows an analysis of the institutional and technological factors which explain the low productivity. Systems of inheritance, strip cultivation, and very small and uneconomical holdings are discussed. Lack of capital is an extremely important factor in explaining this low production. Moore believes that, with the institutional and organizational conditions prevailing in these countries, there is little ground for believing that the condition of the eastern and southern peasant can be greatly changed through improvements in agriculture. The pace of change and the possible

growth of agricultural capital would be too slow. There is a widely accepted opinion among population students that emigration, while relieving pressure to some extent, affords no real or permanent solution for a country with an unfavorable relation of men and land. Moore does not believe that emigration is any solution to the problem of these agrarian countries.

According to this study, hope for an improvement in the poverty of these countries lies largely in industrialization. Industrialization would not only bring forth new and greater amounts of products but at the same time would lead to a needed decline in the birth rate. Although deficient in power and minerals, there are many industries which might be successfully introduced. As in the case of agriculture there is a dearth of capital, but Moore believes that this industrial capital could more easily be secured than in the case of agriculture. Government aid and planning would play an important part in this development. Already these countries support hidden unemployment in agriculture and these potential workers could be utilized in industrial work. Moore is of the opinion that modern industrial techniques of northwestern Europe could be introduced in a rather short period.

As indicated above, this study uses some of the new techniques to bring out the unfavorable relation of resources to numbers. Overpopulation is a relative matter and is a conception which is both difficult to define or to prove. In the matter of methodology there may be and usually are differences of opinion. The author is fully aware of the limitations of statistical data. This is a study very carefully done and without dogmatic statements.

As we look at Europe at the present time and consider its economic and political problems, there is a serious limitation to this study. The entire approach of this book, written in 1945, is based on the assumption of something like a pre-war Europe. It now seems certain that a number of these nations face political and institutional changes of the greatest importance. Some of them may disappear entirely or be so modified that they cannot be identified with those of pre-war Europe. Will many of them be combined into a sphere of influence dominated by the present great power to the East? Will Latvia, Rumania, or Bulgaria institute planning to secure industrialization on anything resembling pre-war economic units? Present signs point in other directions. Whatever happens to these countries, this book will represent an extremely important work about the demography of this important area of Europe.

LAWRENCE R. CHENAULT

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TITLES OF NEW BOOKS

Economic Theory; General Works

ABBOTT, L. D., editor. *Masterworks of economics; digests of ten great classics.* (Garden City: Doubleday. 1946. Pp. 763. $4.)

BACHMANN, H. *Wirtschafts-Wille und Wert.* (Berne: Francke. 1945. Pp. 214. Sw. fr. 13.50.)

CHAMBERLIN, E. H. *The theory of monopolistic competition: a re-orientation of the theory of value.* 5th ed. Harvard econ. stud., Vol. XXXVIII. (Cambridge: Harvard Univ. Press. 1946. Pp. xiv, 282. $3.50.)

The fifth edition contains a new chapter, "The Difference between Monopolistic and 'Imperfect' Competition," based upon an article which appeared in the *Quarterly Journal of Economics* in 1937.

EGGENSCHWILER, W. *Mehrkonsum-Eine Untersuchung über die sozialwirtschaftliche Bedeutung des Postulates eineraktiven Forderung des Massenkonsums.* (Berne: Francke. Pp. 174. Sw. fr. 11.50.)

GAMBS, J. S. *Beyond supply and demand—a reappraisal of institutional economics.* (New York: Columbia Univ. Press. 1946. Pp. xii, 105. $1.60.)

GERTH, H. H. and MILLS, C. W., editors. *From Max Weber: essays in sociology.* (New York: Oxford Univ. Press. 1946. Pp. xi, 490. $5.)

GRAY, A. *The Socialist tradition—Moses to Lenin.* (New York: Longmans Green. 1946. Pp. x, 523. $7.50.)

KIEKHOFER, W. H. *Economic principles, problems and policies.* 3rd ed. (New York: Appleton-Century. 1946. Pp. xxiii, 910. $4.50.)

MARCHAL, J. *Le mécanisme des prix et la structure de l'économie.* (Paris: Médicis. 1946. Pp. 245. 240 fr.)

MERRILL, F. E., editor, and others. *Fundamentals of social science.* (New York: Appleton-Century. 1946. Pp. xvii, 660. $3.75.)

SILBERNER, E. *The problem of war in nineteenth century economic thought.* Trans. by A. H. Kappe. (Princeton: Princeton Univ. Press. 1946. Pp. xiv, 332. $3.)

ZEUTHEN, F. *Okonomisk teori og metode.* (Copenhagen: Busck. 1942. Pp. 336.)

Economic History

DESTLER, C. McA. *American radicalism, 1865–1901; essays and documents.* Monog. no. 3. (New London: Connecticut College. 1946. Pp. xii, 276. $3.50; paper, $2.50.)

ELLIS, D. M. *Landlords and farmers in the Hudson-Mohawk region, 1790–1850.* (Ithaca: Cornell Univ. Press. 1946. Pp. xiii, 347. $4.)

ELSAS, M. J. *Umriss einer Geschichte der Preise und Löhne in Deutschland.* Vol. II, Pt. A (Leyden: Sijthoff's Uitgeversmij. 1940. Pp. iv, 649. Fl. 13.10.)

This book is only part of the second volume of "Outlines of a History of Prices and Wages in Germany." Due to the invasion of Holland, the volume appears only in 1946, though the year of publication is mentioned as 1940.

FOX, W. H., editor. *Letters of William Davies, Toronto, 1854–1861.* Preface by H. A. Innis. (Toronto: Univ. of Toronto Press. 1945. Pp. xviii, 144. $2.10.)

An informative and interesting contribution to the history of business in Canada.

SCHACHNER, N. *Alexander Hamilton.* (New York: Appleton-Century. 1946. Pp. 494. $4.)

National Economies

BROWN, G. H. *The international economic position of New Zealand.* Stud. in bus. admin., Vol. 16, Pts. 1 and 2. (Chicago: Univ. of Chicago Press. 1946. Pp. xii, 195. $1.50.)

BURGIN, M. *The economic aspects of Argentine federalism, 1820–1852.* Econ. stud. Vol. LXXVIII. (Cambridge: Harvard Univ. Press. 1946. Pp. xiv, 304. $4.)

FIRTH, R. *Malay fishermen: their peasant economy.* Issued in coöperation with the Royal Inst. of Internat. Affairs and the Inst. of Pacific Relations. (London: Kegan Paul., French, Trubner. New York: Inst. of Pacific Relations. 1946. Pp. xii, 354. $4.50.)

POSTHUMUS, N. W., editor. *The Netherlands during German occupation.* Annals, Vol. 245. (Philadelphia: Am. Acad. Pol. and Soc. Sci. 1946. Pp. v, 231. $2.)

RADIN, G. *Economic reconstruction in Yugoslavia—a practical plan for the Balkans.* (New York: King's Crown Press. 1946. Pp. xii, 161. $2.50.)

Australian Social Science abstracts. No. 1, Mar., 1946. (Melbourne: Committee on Research in the Soc. Sci., Faculty of Commerce, Univ. of Melbourne. 1946. Pp. 17. 4 *s.* per year.)

La Belgique au lendemain de la guerre. Bull. bimes. no. 120. (Bruxelles: Société Belge d'Etudes et d'Expansion. 1945. Pp. 84.)

The economy of Puerto Rico—with special reference to the economic implications of independence and other proposals to change its political status. (Washington: U. S. Tariff Commission. 1946. Pp. 67.)

Economic Systems; Post-War Planning

BETTELHEIM, Ch. *Les problèmes théoriques et pratiques de la planification.* (Paris: Presses Univ. de France. 1946. Pp. 349. 240 fr.)

BOWLES, C. *Tomorrow without fear.* (New York: Simon and Schuster. 1946. Pp. 88. $2.50; paper, $1.00.)

DAMALAS, B. V. *La crise du capitalisme et le problème de l'économie dirigée.* (Paris: Presses Univ. de France. 1946. Pp. 327. 240 fr.)

LAIDLER, H. W., editor. *A program for labor and progressives.* (New York: League for Industrial Democracy. 1946. Pp. 48. 25c.)

MAGIL, A. B. *Socialism; what's in it for you.* (New York: New Century Publishers. 1946. Pp. 62. 10c.)

POSNACK, E. R. *The 21st century looks back.* (New York: William-Frederick Press. 1946. Pp. vi, 241. $2.75.)

RAUDENBUSH, D. W. *Democratic capitalism.* (New York: John Day. 1946. Pp. 349. $3.50.)

Death agony of capitalism and the tasks of the Fourth International. (New York: Pioneer Publishers. 1946. Pp. 64. 25c.)

Director of War Mobilization and Reconversion: fifth report to the President, the Senate and the House of Representatives, January 1, 1946. (Washington: Supt. Docs. 1946. Pp. v, 73.)

Statistical Methods; Econometrics; Economic Mathematics; Accounting

BUTSCH, R. L. C. *How to read statistics.* (Milwaukee: Bruce. 1946. Pp. 196. $2.50.)

CRUM, W. L. and SCHUMPETER, J. A. *Rudimentary mathematics for economists and statisticians.* (New York: McGraw-Hill. 1946. Pp. xi, 183. $2.50.)

FINNEY, H. A. *Principles of accounting—intermediate.* 3rd ed. (New York: Prentice-Hall. 1946. Pp. xii, 873.)

HAUSER, P. M. and LEONARD, W. R., editors. *Government statistics for business use.* (New York: Wiley. 1946. Pp. xvi, 432. $5.)

Maugh, L. C. *Statically indeterminate structures*. (New York: Wiley. Pp. 346. $5.)

Schorer, H. *Statistik—Grundlegung und Einführung in die statistische methode*. (Berne: Francke. 1946. Pp. vi, 255. Sw. fr. 12.80.)

India—guide to current official statistics. Vol. I—*Production and prices*. 3rd ed. Prepared under S. Subramanian. (Delhi: Manager of Pubs. 1945. Pp. 144. 4*s*.)

Technical papers of the twentieth annual Michigan Accounting Conference, November 10, 1945. (Ann Arbor: Univ. of Michigan Press. $1.)

National Income and Product; Income Distribution; Consumption Statistics

Barna, T. *Redistribution of incomes through public finance in 1937*. (New York: Oxford. 1946. Pp. 292. $5.)

Mendershausen, H. *Changes in income distribution during the great depression*. Stud. in income and wealth, Vol. 7. (New York: Nat. Bur. of Econ. Research. 1946. Pp. xviii, 173. $2.50.)

Studies in income and wealth. Vol. 8. By Conf. on Research in Income and Wealth. (New York: Nat. Bur. of Econ. Research. 1946. Pp. xiv, 297. $3.)

Business Cycles and Fluctuations

Friedman, M. and others. *What can be done about inflation?* Transcript no. 120. (Chicago: Univ. of Chicago Round Table. 1946. Pp. 27. 10c.)

Hardy, C. O., Williams, K. B., and Ellis, H. S. *Prices, wages and employment*. Postwar econ. stud., no. 4. (Washington: Board of Governors of the Federal Reserve System. 1946. Pp. iv, 94. 25c.)

Contents: Prospects of Inflation in the Transition Period by C. O. Hardy; Employment and Wage Policies by K. B. Williams; Monopoly and Unemployment by H. S. Ellis.

Kidner, F. L. *California business cycles*. (Berkeley and Los Angeles: Univ. of California Press. 1946. Pp. xiv, 131. $2.50.)

Loeb, H. *Full production without war*. (Princeton: Princeton Univ. Press. 1946. Pp. xviii, 284 $3.50.)

Persoff, A. M. *Sabbatical years with pay—a plan to create and maintain full employment*. (Los Angeles: Charter Pub. Co. 1945. Pp. 144. $2.50.)

Pigou, A. C. *Lapses from full employment*. (New York: Macmillan. 1946. Pp. viii, 73. $1.50.)

Rakowski, J. *Die "Vollbeschäftigung" im Kreuzfeuer—Eine dogmenkritische Untersuchung*. (Berne: Francke. 1946. Pp. 52. Sw. fr. 2.80.)

Swanson, E. W. and Schmidt, E. P. *Economic stagnation or progress—a critique of recent doctrines on the mature economy, oversavings, and deficit spending*. (New York: McGraw-Hill. 1946. Pp. xi, 212. $2.50.)

Schweizerische Beiträge zur Wirtschaftlichen Wellen—und Konjunkturforschung: Heft 1—*Das Problem des Freud; Das Wetter als Konjunkturfaktor*. (Berne: Francke. 1946. Pp. 136.)

Public Finance; Fiscal Policy; Taxation

Bowen, H. R. *The future of the corporation income tax*. (New York: Irving Trust Co. 1946. Pp. 30.)

Fellner, W. J. *Monetary policies and full employment*. (Berkeley and Los Angeles: Univ. of California Press. 1946. Pp. xx, 268. $3.50.)

Ferrerro, R. A. La política fiscal y la economía nacional. (Lima: Talleres Gráficos de la Editorial Lumen. 1946. Pp. viii, 77.)

HARRIS, S. and others. *How dangerous is the national debt?* Transcript no. 425. (Chicago: Univ. of Chicago Round Table. 1946. Pp. 24. 10c.)

PHILIP, KJ. *Det Øffentliges finanspolitik og den okonomiske activitet.* (Copenhagen: Ejnar Munksgaards Forlag. 1942. Pp. 437.)

Decisions of the Comptroller General of the United States, July 1, 1944–June 30, 1945. Vol. 24. (Washington: Supt. Docs. 1946. Pp. 1,115. $2.25.)

Financing government in Georgia, 1850–1944. Monog. no. 5. (Athens: Bull. of the Univ. of Georgia. 1946. Pp. x, 76.)

Individual income tax provisions of the internal revenue code, taxable years beginning in 1946. (Washington: Supt. Docs. 1946. Pp. 385. 55c.)

Money and Banking; Short-Term Credit

BURNS, E. J. *Some financial trends of commercial banks in Philadelphia.* Stud. in econ., Vol. 16. (Washington; Catholic Univ. of America. Pp. 132. $1.50.)

NIELSEN, A. E. *Production credit for Southern cotton growers.* (New York: King's Crown Press. 1946. Pp. vi, 194. $2.50.)

PEDERSEN, J. Pengeteori og pengepolitik. (Copenhagen: Nyt Nordisk Forlag. 1944. Pp. 381. Kr. 16.50.)

Assets and liabilities, December 31, 1945—operating insured commercial and mutual savings banks. Rept. no. 24. (Washington: Fed. Deposit Insur. Corp. 1946. Pp. 34.)

The federal budget can be balanced now!; where to find $11.3 billion of challengeable spending in the federal budget for 1947. (Washington: Citizens Nat. Committee. 1946. Pp. 23.)

International Trade, Finance and Economic Policy

ANDERSEN, P. N. *Bilateral exchange clearing policy.* (London: Oxford Univ. Press. Pub. for Inst. of Econ. and Hist., Copenhagen. 1946. Pp. 242.)

CLOYES, C. and BECKER, E. F. *Channels for trading abroad.* Bur. of For. and Dom. Commerce, econ. ser. no. 52. (Washington: Supt. Docs. 1946. Pp. 30. 10c.)

DAMALAS, B. V. *Essai sur l'évolution du commerce international—les théories, les faits.* (Paris: Presses Univ. de Fran. 1940. Pp. xi, 462. 60 fr.)

DUNCAN, G. A. *International trade.* Looking Forward pamph. no. 7. (New York: Royal Inst. of Internat. Affairs. 1946. Pp. 59. 25c.)

FIEZ, R. *Die Veränderungen in der Weltwirtschaftsstruktur und das Problem der internationalen Kapitalanlagen.* (Berne: Franke. 1946. Pp. 124. Sw. fr. 8.40.)

HAMMARSKJÖLD, D. *Sweden's international credit accommodation in 1944 and 1945. Index,* Dec. 1945, Suppl. B. (Stockholm: Svenska Handelsbanken. 1945. Pp. 24.)

MCCLELLAN, G. S. *International trade organization—proposals for world economic recovery.* For. pol. repts., Vol. XXII, No. 1. (New York: Foreign Policy Assoc. 1946. Pp. 10. 25c.)

MANDELBAUM, K. *The industrialization of backward areas.* Inst. of Stat., monog. no. 2. (Oxford: Blackwell. 1945. Pp. viii, 111. 10*s.* 6*d.*)

RONIMOIS, H. E. *Russia's foreign trade; and the Baltic Sea.* (London: Boreas Pub. Co. 1946. Pp. 51.)

SOUTHARD, F. A., JR. *Some European currency and exchange experiences: 1943–1946.* Essays in internat. finan., no. 7. (Princeton: Internat. Finan. Sec., Princeton Univ. 1946. Pp. 23.)

TINBERGEN, J. *International economic co-operation.* (New York: Elsevier, 1945. Pp. 208. $4.)

VAN CLEEF, E. *Getting into foreign trade.* (New York: Ronald Press. 1946. Pp. viii, 133. $2.50.)

VEHILS, R. *Los principios sociales de la Conferencia de Chapultepec.* Cuadernos soc. del consejo, num. 1. (Montevideo: Consejo Interam. de Comercio y Producción. 1945. Pp. xxvii, 73.)

Whittlesey, C. R. *National interest and international cartels.* (New York: Macmillan. 1946. Pp. vii, 172. $2.50.)

American trade proposals: a series of articles looking forward toward a world conference on trade. Dept. of State, commercial pol. ser. 88. (Washington: Supt. Docs. 1946. Pp. 23.)

Conditions of private foreign investment; report by the special joint committee. League of Nations pub., II. Econ. and finan. (New York: Columbia Univ. Press. 1946. Pp. 45.)

Financial agreement with the United Kingdom: related settlements and understandings on trade policies. (Washington: Chamber of Commerce of United States. 1946. Pp. 52. 20c.)

Census of foreign-owned assets in the United States. Treasury Dept. (Supt. Docs. 1945. Pp. 88. 20c.)

Handbook on international trade for manufacturers, wholesalers, jobbers, retailers. Prepared by Internat. Trade Committee. (New York: Committee for Econ. Development. 1946. Pp. 99. 50c.)

Réglementation des paiements avec l'étranger: Suisse. 6ème suppl. FER 28/6. (Basle: Monetary and Econ. Dept., Bank for Internat. Settlements: 1946. Various pp. Sw. fr. 6.50.)

United States Tariff Commission: economic controls and commercial policy in Mexico (Washington: Supt. Doc. 1946. Pp. 46. 15c.)

Business Finance; Insurance; Investments; Securities Markets

Abbott, C. C. *Financing business during the transition.* Committee for Econ. Development research stud. (New York: McGraw-Hill. 1946. Pp. xii, 141. $1.75.)

Clough, S. B. *A century of American life insurance—a history of the Mutual Life Insurance Company of New York, 1843–1943.* (New York: Columbia Univ. Press. 1946. Pp. xiv, 402. $4.50.)

Dingman, H. *Risk appraisal.* (Cincinnati: Nat. Underwriter Co. 1946. Pp. 831. $10.)

Hart, W. LeR. *Mathematics of investment.* 3rd ed. (Boston: Heath. 1946. Pp. 436. $3.60.)

Mehr, R. T. *Mortgage foreclosures and property management by life insurance companies.* (Philadelphia: Univ. of Pennsylvania. 1944. Pp. v, 124.)

Superintendent of Insurance: eighty-fifth annual report for year ended December 31, 1943. Vol. III-A. *Casualty and surety companies; title companies.* Vol. III-B. *Fraternal benefit societies.* Leg. doc. (1944), no. 71. (Albany: Williams Press. 1945. Pp. 94a, 554, 386b.)

Public Control of Business; Public Administration; National Defense and War

Bhargava, R. N. *Price control and rationing.* (Allahabad: Kitabistan. 1945. Pp. 124. Rs. 4/8.)

Lynch, D. *The concentration of economic power.* (New York: Columbia Univ. Press. 1946. Pp. x, 423. $5.50.)

Swaswamy, K. G., and others. *Famine, rationing and food policy in Cochin: Medical surveys.* (Royapettah, Madras: Servinda Kerala Relief Centre. 1946. Pp. x, 35. Rs. 3.)

Code of federal regulations: 1945 supplement, containing documents of general application and legal effect issued during 1945, including Presidential proclamations, Executive orders, and other Presidential documents. Bk. 1, Tit. 1–9; 10–14. (Washington: Supt. Docs. 1946. Pp. 924; 1288. $3 each.)

The end of price control—how and when? A statement on national policy by the Research Committee. (New York: Committee for Econ. Development. 1946. Pp. 14.)

Price control or decontrol? A statement adopted by the Board of Directors, March 22, 1945. (Washington: Chamber of Commerce of U. S. A. 1946. Pp. 23. 5c.)

Robinson-Patman act symposium—the federal law against price and other discrimination. (Chicago: Commerce Clearing House. 1946. Pp. 105. $1.)

War contract terminations and settlement: 6th report (Jan., 1946); 7th report (Apr., 1946) by the Director of Contract Settlement to the Congress. (Washington: Supt. Docs. 1946. Pp. 45; 55. 10c, 15c.)

Industrial Organization; Price and Production Policies; Business Methods

CONANT, W. H. *Business administration, or the art of management.* (New York: Gregg Publishing Company. 1945. Pp. 335. $3.; school ed., $2.)

DRUCKER, P. F. *Concept of the corporation.* (New York: Day. 1946. Pp. 306. $3.)

KIRK, J. G., and others. *Introduction to business.* 3rd ed. (Philadelphia: Winston. 1946. Pp. 520. $1.80.)

MARGOLIUS, S. *The fresh start; plain facts about small business.* (New York: Ackerman. 1946. Pp. 80. $1.)

STEINDL, J. *Small and big business—economic problems of the size of firms.* Inst. of Stat., monog. no. 1. (Oxford: Blackwell. 1945. Pp. v, 66. 7*s.* 6*d.*; paper, 5*s.*)

Economic concentration and World War II: report of the Smaller War Plants Corporation to the Spec. Committee to Study Problems of American Small Business, U. S. Senate. 79th Cong., 2nd sess. (Washington: Supt. Docs. 1946. Pp. xiv, 359.)

Marketing; Domestic Trade

ENGLE, N. H. *Marketing in the West.* (New York: Ronald Press. 1946. Pp. xii, 263. $3.50.)

SHEPHERD, G. S. *Marketing farm products.* (Ames, Iowa: Collegiate Press. 1946. Pp. x, 445. $4.25.)

SOMMER, H. H. *Market milk and related products.* 2nd ed. (Madison, Wis.: Author, 710 Huron Hill. 1946. Pp. 759. $6.50.)

Mining; Manufacturing; Construction

Aircraft plans and facilities: report of the Surplus Property Administration to the Congress, Jan. 14, 1946. (Washington: Supt. Docs. 1946. Pp. 59. 15c.)

Boot and shoe industry statistics. Indus. ser. no. 38. (Washington: Off. of Domestic Commerce, Dept. of Commerce. 1946. Pp. 47, mimeo.)

Standard industrial classification manual. Vol. 1. *Manufacturing industries.* Pt. 1. *Titles and descriptions of industries.* (Washington: Supt. Docs. 1945. Pp. 81. 75c.)

Iron and steel: prepared in response to requests from Committee on Finance of the U. S. Senate and the Committee on Ways and Means of the House of Representatives. Tariff Commission, war changes in industry ser., rept. 15. (Washington: Supt. Docs. 1946. Pp. 176. 30c.)

Transportation; Communication; Public Utilities

BAUER, J. *The public utility franchise: its functions and terms under state regulation.* (Chicago: Pub. Admin. Serv. 1946. Pp. 17. $1.)

NATESAN, L. A. *State management and control of railways in India: a study of railway finance rates and policy during 1920–37.* Foreword by SIR R. L. WEDGEWOOD. (Calcutta: Univ. of Calcutta. 1946. Pp. xxiii, 496. Rs. 12.)

PARMELEE, J. H. *A review of railway operations in 1945.* (Washington: Assoc. of Am. Railroads, Bur. of Railway Econ. 1946. Pp. 32.)

TOMLINSON, J. D. *The international control of radiocommunications.* (Ann Arbor: Edwards. 1946. Pp. 314. $2.50.)

ZACHAROFF, L., editor. *Vital problems of air commerce.* (New York: Duell, Sloan and Pearce. 1946. Pp. 353. $3.)

Civil aviation and the national economy. (Washington: Supt. Docs. 1945. Pp. 147. 55c.)

Interstate Commerce Commission: Vol. 262. *Decisions, Nov., 1944–June, 1945.* (Washington: Supt. Docs. 1946. Pp. 838. $2.25.)

The pioneer period of European railroads—a tribute to Mr. Thomas W. Streeter. Kress Lib. of Bus. and Econ., pub. no. 3. (Boston: Harvard Grad. School of Bus. Admin. 1946. Pp. vi, 71. 50c.)

Consists principally of a bibliography.

A proposed department of transportation—a bibliographical memorandum. (Washington: Bur. of Railway Econ. Lib., Assoc. of Am. Railroads. 1946. Pp. 12, mimeo.)

Transportation lines of the Mississippi River system, 1946. Army Engineer Dept., transp. ser. 4. (Washington: Supt. Docs. 1946. Pp. 213. 60c.)

War Shipping Administrator: United States merchant marine at war—report to the President, Jan. 15, 1946. (Washington: Supt. Docs. 1946. Pp. 80. 30c.)

Agriculture; Forestry; Fisheries

BENNETT, H. H. *Our American land: the story of its abuse and its conservation.* Dept. of Agric., misc. pub. no. 596. (Washington: Supt. Docs. 1946. Pp. 31. 10c.)

FARNSWORTH, H. C. *Wheat growers and the tariff.* Carnegie Endowment for Internat. Peace, Div. of Econ. and Hist., agric. ser., no. 4. (Berkeley: Univ. of California Press. 1946. Pp. 29.)

FRANK, B. and BETTS, C. A. *Water and our forests.* Dept. of Agric., misc. pub. no. 600. (Washington: Supt. of Docs. 1946. Pp. 29.)

HOWALD, O. *Einführung in dei Agrarpolitik—unter besonderer Berücksichtigung der schweizerischen Verhältnisse.* (Berne: Francke. 1946. Pp. 272. Sw. fr. 12.80.)

MOORE, A., and others. *The world food crisis: what should America do?* Transcript no. 413. (Chicago: Univ. of Chicago Round Table. 1946. Pp. 27. 10c.)

Facts about cotton and southern farming: background information for farm leaders. Dept. of Agric., misc. pub. no. 594. (Washington: Supt. Docs. 1946. Pp. 64.)

Fruit and vegetable canning industries, 1934–45; production and wholesale distribution. Indus. ser. no. 15. (Washington: Bur. of For. and Dom. Commerce, U. S. Dept. of Commerce. 1945. Pp. x, 277. 40c.)

Peacetime adjustments in farming: possibilities under prosperity conditions. Dept. of Agric., misc. pub. no. 595. (Washington: Supt. Docs. 1945. Pp. 52. 20c.)

Revue internationale des industries agricoles: Nos. 2–6, 1945. (Paris: Pub. de la Commission Internat. des Industries Agric. 1946. Pp. 593.)

The first post-war number resumes the publication of reviews and bibliography.

What peace can mean to American farmers: agricultural policy. Dept. of Agric., misc. pub. no. 589. (Washington: Supt. Docs. 1946. Pp. 41, 10c.)

Wheat studies of the Food Research Institute, 1924–1944. (Stanford University, Calif.: Food Research Inst. 1946. Pp. 13.)

Economic Geography; Regional Planning; Urban Land; Housing

CURRIE, A. W. *Economic geography of Canada.* (New York: Macmillan. 1946. Pp. xiv, 455. $3.50.)

KIDNER, F. L. and NEFF, P. *Los Angeles, the economic outlook.* (Los Angeles: Haynes Found. 1946. Pp. 24.)

A condensation prepared by M. Lewin of *An Economic Survey of the Los Angeles Area* by the same authors.

KINGSBURY, L. M. *The economics of housing as presented by economists, appraisers, and other evaluating groups.* (New York: King's Crown Press. 1946. Pp. 186. $2.50.)

MONTGOMERY, M. and CLAWSON, M. *History of legislation and policy formation of the Central Valley Project.* (Berkeley: U. S. Dept. of Agric., Bur. of Agric. Econ. 1946. Pp. 276, mimeo.)

ODUM, H. W. and JOCHER, K., editors. *In search of the regional balance of America.* (Chapel Hill: Univ. of North Carolina Press. 1945. Pp. viii, 162. $3.)

PETERSON, E. T., editor. *Cities are abnormal.* (Norman: Univ. of Oklahoma Press. 1946. Pp. 279. $3.)

General housing bill S. 1592: summary of provisions, recommendations for immediate and long-term legislative action, pro and con arguments. (Washington: Citizens Nat. Committee. 1946. Pp. 31.)

Proceedings of the University of Wiwconsin Conference on Social and Economic Research in Housing, Madison, Wisconsin, Dec. 14–15, 1945. Suppl. to Jour. of Land and Pub. Utility Econ., Feb., 1946. (Madison: Univ. of Wisconsin. 1946. Pp. 24.)

Urban redevelopment legislation in the United States: a comparative analysis. (Chicago: Am. Soc. of Planning Officials. 1946. Pp. 8. $2.)

Labor and Industrial Relations

CARSKADON, T. R. and WILLIAMSON, S. T. *Your stake in collective bargaining.* Pamph. no. 117. (New York: Public Affairs Committee. 1946. Pp. 32. 10c.)

DESMAREST, J. *La politique de la main-d'oeuvre en France.* (Paris: Presses Univ. de France. 1946. Pp. 273. 240 fr.)

GADGIL, D. R. *Regulation of wages and other problems of industrial labor in India.* Pub. no. 9. (Gokhale: Gokhale Inst. of Pol. and Econ. 1945. Pp. 101. 10*s*.)

GEOGHEGAN, A. T. *The attitude towards labor in early Christianity and ancient culture.* Stud. in Christian antiquity, no. 6. (Washington: Catholic Univ. of Am. Press. 1945. Pp. 278. $2.50.)

GREGORY, C., and others. *Labor and the law.* Transcript. no. 426. (Chicago: Univ. of Chicago Round Table. 1946. Pp. 23. 10c.)

KIRKALDY, H. S. *Industrial relations in conditions of full employment.* (Cambridge: Cambridge Univ. Press. New York: Macmillan. 1945. Pp. 26. 50c.)

KROUT, J. A., editor. *Labor policy and labor relations.* Proceedings, Vol. 22, no. 1. (New York: Acad. of Pol. Sci., Columbia Univ. 1946. Pp. 111. $2.50.)

KUCZYNSKI, J. *Labour conditions in Great Britain, 1750 to the present.* 2nd ed. (New York: Internat. Publishers. 1946. Pp. 191. $2.50.)

A second edition of part of the author's earlier *Short History of Labour Conditions in Great Britain and the Empire* with added chapters and an introduction which attempts to justify the theories of absolute and relative deterioration of labor conditions.

LAIDLER, H. W., editor. *A program for labor and progressives: a synmposium.* (New York: League for Industrial Democracy. 1946. Pp. 48. 25c.)

MAY, S. C. and NORRIS, A. G. *Estimates of California employment and unemployment, 1946–1947.* (Berkeley: Bur. of Pub. Admin., Univ. of California. 1946. Pp. viii, 29, mimeo.)

OWEN, W. V. *Labor problems.* (New York: Ronald Press. 1946. Pp. xv, 570. $4.50.)

———. *Labor-management economics: a basic practical summary.* (New York: Ronald Press. 1946. Pp. 131. $2.)

PRICE, J. *The international labor movement.* Royal Inst. of Internat. Affairs. (New York: Oxford Univ. Press. 1946. Pp. 286. $4.50.)

SMITH, L. J. *Collective bargaining.* (New York: Prentice-Hall. 1946. Pp. xiii, 468. $5.)

STEINKRAUS, H. W. *A program for industrial peace.* (Washington: Chamber of Commerce of U. S. A. 1946. Pp. 21.)

STIGLER, G. J. *Domestic servants in the United States, 1900–1940.* Occasional paper 24. (New York: Nat. Bur. of Econ. Research. 1946. Pp. iv, 44. 50c.)

WARD, R. *The personnel program of Jack and Heintz.* (New York: Harper. 1946. Pp. x, 146. $2.)

White, J. G. *Changing your work?* (New York: Assoc. Press. 1946. Pp. xiii, 210. $2.50.)

Annual wages and employment stabilization techniques. Research rept. no. 8. (New York: Am. Manag. Assoc. 1946. Pp. 96. $2.25.)

Director's report: twenty-eighth session, International Labor Conference. Rept. I. (Montreal: Internat. Lab. Off. 1946. Pp. 59.)

The federal labor laws: a manual for supervisors. (Deep River, Conn.: Nat. Foremen's Inst. 1946. Pp. 72. $2.50.)

Legislative series, Jan.–Mar., 1946. (Montreal: Internat. Lab. Off. 1946. Various pp. $5. yearly.)

Minutes of the Governing Body, Philadelphia: 92nd sess., 22 Apr.–4 May 1944; 93rd sess., 13–14 May 1944. (Montreal: Internat. Lab. Off. [1946.] Pp. 63; 45.)

National Labor Relations Board: decisions and orders. Vol. 63. *July 31, 1945–Oct. 9, 1945*. (Washington: Supt. Docs. 1946. Pp. 1508. $2.75.)

The post-war industrial outlook for negroes: papers and proceedings of the eighth annual conference of the Division of the Social Sciences, October 18–20, 1944. Stud. in the soc. sci., Vol. IV, no. 1. (Washington: Howard Univ. Press. 1945. Pp. vi, 220.)

The war and women's employment—the experience of the United Kingdom and the United States. (Montreal: Internat. Lab. Off. 1946. Pp. iii, 287. $1.50.)

Women workers in Brazil. Women's Bur., bull. 206. (Washington: Supt. Docs. 1946. Pp. 42. 10c.)

Social Insurance; Relief; Pensions; Public Welfare

Duncan, O. D., and others. *Social research on health*. (New York: Soc. Sci. Research Counc. 1946. Pp. viii, 212. $1.)

Harrison, S. M. and Andrews, F. E. *American foundations for social welfare*. (New York: Russell Sage Found. 1946. Pp. 249. $2.)

An analysis of the work of the foundations, with an historical introduction and a descriptive directory.

Lempit, O. *Insurance for postwar jobs*. (New York: Hobson Book Press. 1945. Pp. 64. $2.)

Meriam, L. *Relief and social security*. (Washington: Brookings Inst. 1946. Pp. xx, 912. $5.)

Muntz, E. E. *Proposals for health, old-age and unemployment insurance—a comparison of the 1943 and 1945 Wagner-Murray bills*. Nat. econ. probs. no. 418. (New York: Am. Enterprise Assoc. 1946. Pp. 87. 50c.)

Richardson, J. T. *The origin and development of group hospitalization in the United States, 1890–1940*. Univ. stud., vol. 20, no. 3. (Columbia: Univ. of Missouri. 1945. Pp. 101. $1.25.)

Tharp, C. R. *Social security and related services in Michigan, their administration and financing*. Govt. stud. no. 16. (Ann Arbor: Univ. of Michigan Press. [1946.] Pp. 187. 75c.)

Labor looks at unemployment insurance: report of the Conference Workshop of Organized Labor on Employment Security at the University of Chicago. (Chicago: Univ. of Chicago Press. 1946. Pp. 40. $1.)

Social security for farm people: questions and answers. (Washington: Supt. Docs. 1946. Pp. 14.)

Social security revision. (Chicago: Counc. of State Governments. 1946. Pp. 34. $1.)

Consumption; Coöperation

Lincoln, M. D. *Objectives of consumer cooperation*. Rev. ed. (New York: Coop. League. 1946. Pp. 16. 5c.)

Luck, J. M. *The war on malnutrition and poverty: the role of consumer co-operatives*. (New York: Harper. 1946. Pp. 214. $2.50.)

STERN, J. K. *Inventory of farmers' cooperatives, Pennsylvania.* (State College, Pa.: Pennsylvania State Coll., School of Agric. 1945. Pp. 63.)

WARBASSE, J. P. *Cooperative medicine: the cooperative organization of health protection.* 4th ed. (New York: Coop. League. 1946. Pp. 63. 25c.)

———. *A short history of the Cooperative League of the United States of America.* 2nd ed. (New York: Coop. League. 1946. Pp. 39. 25c.)

Consumer education and the social studies: a statement prepared for the Consumer Education Study of the Nat. Assoc. of Secondary-School Principals. (Washington: Nat. Educ. Assoc. 1945. Pp. 24. 15c.)

Relation of business education to consumer education: a statement prepared for the Consumer Education Study of the Nat. Educ. Assoc. (Washington: Nat. Educ. Assoc. 1945. Pp. 28.)

Population; Migration; Vital Statistics

CHANDRASEKHAR, S. *India's population—fact and policy.* Introd. by W. S. THOMPSON. (New York: Day. 1946. Pp. 117. $2.)

CHEN, T. *Population in modern China.* Am. Jour. Soc., Vol. LII, No. 1, Pt. 2. (Chicago: Univ. of Chicago Press. 1946. Pp. ix, 126.)

DADE, E. B. *Migration of Kansas population, 1930–1945.* Indus. research ser., no. 6. (Lawrence: Univ. of Kansas Pubs. 1946. Pp. 28.)

THOMPSON, W. S. *Population and peace in the Pacific.* (Chicago: Univ. of Chicago Press. 1946. Pp. 397. $3.75.)

Unclassified Items

BURNS, A. F. *Economic research and the Keynesian thinking of our times.* 26th annual rept. (New York: Nat. Bur. of Econ. Research. 1946. Pp. 69.)

KAEMPFFERT, W. *Should the government support science?* Pamph. no. 119. (New York: Public Affairs Committee. 1946. Pp. 32. 10c.)

LANGER, E. M. *League of Nations: list of comissions and committees, economic and financial section.* (New York: Woodrow Wilson Memorial Lib., Woodrow Wilson Found. 1946. Pp. 25. $1.)

MCNIMM, N., and others, editors. *Bibliography of the published writings of John Stuart Mill.* Stud. in humanities, no. 12. (Evanston: Northwestern Univ. 1945. Pp. 115. $2.50.)

MORGAN, A. E. *Nowhere was somewhere—how history makes Utopias and how Utopias make history.* (Chapel Hill: Univ. of North Carolina Press. 1946. Pp. 234. $2.50.)

NORTHROP, F. S. C. *The meeting of East and West—an inquiry concerning world understanding.* (New York: Macmillan. 1946. Pp. xxii, 531. $6.)

ROSEN, G. *Fees and fee bills: some economic aspects of medical practice in nineteenth century America.* Bull. of the Hist. of Medicine, no. 6. (Baltimore: Johns Hopkins Press. 1946. Pp. iii, 93. $1.50.)

League of Nations publications January 1, 1940–December 31, 1945. (Geneva: Pub. Dept., League of Nations. 1946. Pp. 24.)

Monthly list of selected articles. Vol. XVII, Nos. 10–12. (Geneva: League of Nations Library. 1945. Pp. 24.)

Proceedings of the Institute of Economics and Finance, Occidental College, Los Angeles; fourth sess. Feb. 28, Mar. 1, 2, 1945. (Los Angeles: Inst. of Econ. and Finan., Occidental Coll. 1945. Pp. 161.)

University education and business. Report by a Committee appointed by the Cambridge University Appointments Board, together with a summary and analysis of evidence collected for the Committee. (Cambridge: Univ. Press. New York: Macmillan. 1945. Pp. 77. $1.)

RECENT DANISH PUBLICATIONS

Editor's Note—Through the kindness of Mr. Svend Laursen, of the Department of State, we have received the following list of books which he regards as the more important economic works published in Denmark since 1940.

ANDERSEN, P. NYBO. Bilateral exchange clearing policy. (Copenhagen: Ejnar Munksgaards Forlag. 1946. Pp. 242.)

PEDERSEN, H. WINDING. *Samfundsøkonomiens Grundtraek.* Economic principles. (Copenhagen: Høst og Søns Forlag. 1943. Pp. 425.)

——. *Omkostninger og Prispolitik.* Costs and price policy. (Copenhagen: Høst og Søns Forlag. 1940. Pp. 209.)

Økonomiske Efterkrigsproblemer. Economic post-war problems. Vol. 1–2. Report submitted by a Treasury commission of economic experts. (Copenhagen: H. H. Schultz A/S. 1945. Pp. 293, 284.)

ZEUTHEN, F. *Økonomisk Teori og Metode.* Economic theory and methods. (Copenhagen: Nyt Nordisk Forlag. 1942. Pp. 336.)

PEDERSEN, J. *Fuld Beskaeftligelse og økonomisk Tryghed.* Full employment and economic security. (Copenhagen: Nyt Nordisk Forlag. 1945. Pp. 128.)

——. *Pengeteori og Pengepolitik.* Monetary theory and policy. (Copenhagen: Nyt Nordisk Forlag. 1944. Pp. 375.)

PHILIP, KJ. *Det offentliges Finanspolitik og den økonomiske Aktivitet.* Public finance and economic activity. (Copenhagen: Ejnar Munksgaards Forlag. 1942. Pp. 437.

PERIODICALS

Economic Theory; General Works

ASHTON, T. S. *The relation of economic history to economic theory.* Economica, May, 1946. Pp. 16.

BISHOP, R. L. *Professor Knight and the theory of demand.* Jour. Pol. Econ., Apr., 1946. Pp. 29.

BOBER, M. M. *Marx and economic calculation.* Am. Econ. Rev., June, 1946. Pp. 14.

CHAPMAN, SIR S. *The profit motive and the economic incentive.* Econ. Jour., Mar., 1946. Pp. 6.

CRICK, W. F. *What's the use of economists?* So. African Jour. Econ., Mar., 1946. Pp. 5.

DEMPSEY, REV. B. W., S.J. *"Ability to pay."* Quart. Jour. Econ., May, 1946. Pp. 14.

———. *Ability to pay.* Rev. Soc. Econ., Jan., 1946. Pp. 14.

DIRKSEN, REV. C. F., C.PP.S. *The Catholic philosopher and the Catholic economist.* Rev. Soc. Econ., Jan., 1946. Pp. 7.

DOMAR, E. D. *Capital expansion, rate of growth, and employment.* Econometrica, Apr., 1946. Pp. 11.

FAIRCHILD, H. P. *Free enterprise and full employment.* Am. Soc. Rev., June, 1946. Pp. 6.

HURWICZ, L. *Theory of the firm and of investment.* Econometrica, Apr., 1946. Pp. 28.

KAPP, K. WM. *Teaching of economics: a new approach.* Southern Econ. Jour., Apr., 1946. Pp. 8.

KEIRSTEAD, B. S. and COORE, D. H. *Dynamic theory of rents.* Canadian Jour. Econ. and Pol. Sci., May, 1946. Pp. 4.

KLEIN, L. R. *Macroeconomics and the theory of rational behavior.* Econometrica, Apr., 1946. Pp. 16.

KNIGHT, F. H. *Comment on Mr. Bishop's article.* Jour. Pol. Econ., Apr., 1946. Pp. 7.

MARSCHAK, J. *Neumann's and Morgenstern's new approach to static economics.* Jour. Pol. Econ., Apr., 1946. Pp. 19.

MENDERSHAUSEN, H. *Concept and teaching of economics.* Am. Econ. Rev., June, 1946. Pp. 8.

MYINT, H. *The classical view of the economic problem.* Economica, May, 1946. Pp. 22.

NEISSER, H. *Keynes as an economist.* Soc. Research, July 1946. Pp. 11.

REYNOLDS, L. G. *The supply of labor to the firm.* Quart. Jour. Econ., May, 1946. Pp. 22.

VAN DER HORST, S. T. *Some reflections on full employment.* So. African Jour. Econ., Mar., 1946. Pp. 17.

WILSON, E. B. *Notes on utility theory and demand equations.* Quart. Jour. Econ., May, 1946. Pp. 8.

WORCESTER D. A., JR. *A reconsideration of rent theory.* Am. Econ. Rev., June, 1946. Pp. 20.

Economic History

HAMILTON, E. J. *The first twenty years of the Bank of Spain.* II. Jour. Pol. Econ. Apr. 1946. Pp. 25.

TANNENBAUM, F. *A note on the economic interpretation of history.* Pol. Sci. Quart., June 1946. Pp. 7.

WALTERS, R., JR. *The making of a financier: Albert Gallatin in the Pennsylvania Assembly.* Penn. Mag. of Hist. and Biog., July, 1946. Pp. 12.

National Economies

JOHNSON, A. and HAMBURGER, E. *The economic problem of Germany.* Soc. Research, June, 1946. Pp. 48.

MIKHAILOV, N. *The Soviet peacetime economy.* For. Affairs, July, 1946. Pp. 5.

SCHWEITZER, A. *Big business and private property under the Nazis.* Jour. Bus. Univ. of Chicago, Apr., 1946. Pp. 28.

STEIGER, A. J. *Previews of the fourth Five-Year Plan.* Am. Rev. Soviet Union, May, 1946. Pp. 16.

Economic post-war problems in Denmark. Internat. Lab. Rev., Mar.–Apr., 1946. Pp. 9.

Economic Systems; Post-War Planning

SMITH, H. R. *The role of science in the formulation of economic policy.* Southern Econ. Jour., Apr. 1946. Pp. 17.

YOUNG, K. *Society and the state.* Am. Soc. Rev., Apr., 1946. Pp. 10.

Statistical Methods; Econometrics; Economic Mathematics; Accounting

FERBER, R. *The disproportionate method of market sampling.* Jour. Bus. Univ. of Chicago, Apr., 1946. Pp. 10.

HANSEN, M. H., HURWITZ, W. N. and GURNEY, M. *Problems and methods of the sample survey of business.* Jour. Am. Stat. Assoc., June, 1946. Pp. 17.

MADOW, L. H. *Systematic sampling and its relation to other sampling designs.* Jour. Am. Stat. Assoc., June, 1946. Pp. 14.

SMITH, M. *Industrial accounting in a competitive economy.* N.A.C.A. Bull., June, 1946. Pp. 13.

STONE, R. *Analysis of market demand. With discussion.* Jour. Royal Stat. Soc., Vol. CVIII, Pts. III–IV, 1945. Pp. 106.

THIRLBY, G. F. *The subjective theory of value and accounting "cost."* Economica, Feb., 1946. Pp. 18.

VATTER, W. J. *A direct method for the preparation of fund statements.* Jour. Accountancy, June, 1946. Pp. 11.

National Income and Product; Income Distribution; Consumption Statistics

GRAAFF, J. DE V. *Fluctuations in income concentration.* So. African Jour. Econ., Mar., 1946. Pp 18.

FISHER, A. G. B. *"Full Employment" and income inequality.* Econ. Jour., Mar., 1946. Pp. 9.

HAGEN, E. E. *Dr. Mayer on postwar national income.* Jour. Pol. Econ., Apr., 1946. Pp. 1.

NAIDOO, V. S. *Survey of the income and expenditure of Indian employees of the Durban Corporation, living at the Magazine Barracks, Durban.* So. African Jour. Econ., Mar., 1946. Pp. 23.

Business Cycles and Fluctuations

BRAUNTHAL, A. *Wage policy and full employment.* Internat. Postwar Problems, Jan., 1946. Pp. 20.

LERNER, A. P. *An integrated full employment policy.* Internat. Postwar Problems, Jan., 1946. Pp. 61.

METZLER, L. A. *Business cycles and the modern theory of employment.* Am. Econ. Rev., June, 1946. Pp. 14.

MEYERS, A. L. *Some implications of full-employment policy.* Jour. Pol. Econ., June, 1946. Pp. 8.

SADIE, J. L. *A note on the business cycle in South Africa, 1937–40.* So. African Jour. Econ., Mar., 1946. Pp. 6.

WANTRUP, S. V. C. *Resource conservation and economic stability.* Quart. Jour. Econ., May, 1946. Pp. 41.

Public Finance; Fiscal Policy; Taxation

HICKS, U. K. *The terminology of tax analysis.* Econ. Jour., Mar., 1946. Pp. 13.

SIMONS, H. *Federal tax reform.* Internat. Postwar Problems, Jan., 1946. Pp. 12.

SLITOR, R. E. *The flexibility of income-tax yield under averaging.* Jour. Pol. Econ., June, 1946. Pp. 3.

WALLICH, H. C. *Debt management and economic policy.* Am. Econ. Rev., June, 1946. Pp. 19.

Money and Banking; Short-Term Credit

COPE, S. R. *The original security bank.* Economica, Feb., 1946. Pp. 6.

FLOYD, J. S. *The changing impact of national banking costs, 1921–1943.* Southern Econ. Jour., Apr., 1946. Pp. 11.

POINDEXTER, J. C. *Functional finance through quasi-free bank credit: a critique.* Am. Econ. Rev., June, 1946. Pp. 13.

SELIGMAN, H. L. *The problem of excessive commercial bank earnings.* Quart. Jour. Econ., May, 1946. Pp. 25.

WHITTLESEY, C. R. *Federal Reserve policy in transition.* Quart. Jour. Econ., May, 1946. Pp. 11.

International Trade, Finance and Economic Policy

BUCHANAN, N. S. *American national income and foreign investment.* Internat. Postwar Problems, Jan., 1946. Pp. 10.

DAVIS, J. S. *Experience under intergovernmental commodity agreements, 1902–45.* Jour. Pol. Econ., June, 1946. Pp. 28.

HAZARD, J. N. *Administering Lend-Lease for the U.S.S.R.* Am. Rev. Soviet Union, May, 1946. Pp. 8.

HEXNER, E. *World Industrial Committees.* Southern Econ. Jour., Apr., 1946. Pp. 9.

KORICAN, O. H. *Aims of our foreign investment policy.* Harvard Bus. Rev., Summer, 1946. Pp. 14.

MACDOUGALL, G. D. A. *Britain's bargaining power.* Econ. Jour., Mar., 1946. Pp. 11.

MITCHELL, B. *Full employment and foreign trade.* Internat. Postwar Problems, Jan., 1946. Pp. 8.

WU, Y. *International capital investment and the development of poor countries.* Econ. Jour., Mar., 1946. Pp. 16.

ZAGLITS, O. *International price control through buffer stocks.* Jour. Farm Econ., May, 1946. Pp. 31.

Business Finance; Insurance; Investments; Securities Markets

SHACKLE, G. L. S. *Interest-rates and the pace of investment.* Econ. Jour., Mar., 1946. Pp. 17.

Public Control of Business; Public Administration; National Defense

AFROS, J. L. *Labor participation in the Office of Price Administration.* Am. Pol. Sci. Rev., June, 1946. Pp. 27.

HADARY, G. *Effectiveness of price control in the dairy industry.* Jour. Bus. Univ. of Chicago, Apr., 1946. Pp. 6.

MORGAN, W. T. *Britain's election: a debate on nationalization and cartels.* Pol. Sci. Quart., June, 1946. Pp. 16.

OXENFELDT, A. R. *Monopoly dissolution; a proposal outlined.* Am. Econ. Rev., June, 1946. Pp. 7.

Industrial Organization; Price and Production Policies; Business Methods

GIVEN, W. B., JR. *Freedom within management.* Harvard Bus. Rev., Summer, 1946. Pp. 11.

MORGAN, T. *A measure of monopoly in selling.* Quart. Jour. Econ., May, 1946. Pp. 3.

Marketing; Domestic Trade

THOMSEN, F. L. *How good is marketing research?* Harvard Bus. Rev., Summer, 1946. Pp. 13.

Transportation; Communication; Public Utilities

BOLLINGER, L. L. *Private versus public management of airports.* Harvard Bus. Rev., Summer, 1946. Pp. 17.

CURRIE, A. W. *Rate control on Canadian public utilities.* Canadian Jour. Econ. and Pol. Sci., May, 1946. Pp. 11.

Agriculture; Forestry; Fisheries

MENZIES-KITCHIN, A. W. and CHAPMAN, W. D. *War-time changes in the organization of two groups of eastern counties farms.* Econ. Jour., Mar., 1946. Pp. 29.

MUNTZ, E. E. *The farmer and social security.* Soc. Forces, Mar., 1946. Pp. 8.

NICHOLLS, W. H. *Some economic aspects of the margarine industry.* Jour. Pol. Econ., June, 1946. Pp. 22.

SCHULTZ, T. W. *Production and welfare objectives for American agriculture.* Jour. Farm Econ., May, 1946. Pp. 14.

WILCOX, W. W. *The economy of small farms in Wisconsin.* Jour. Farm Econ., May, 1946. Pp. 18.

Economic Geography; Regional Planning; Urban Land; Housing

COPELAND, L. C. and MCPHERSON, W. K. *Industrial trends in the Tennessee valley.* Soc. Forces, Mar., 1946. Pp. 10.

HEIMANN. E. *Developmental schemes, planning, and full employment.* Internat. Postwar Problems, Jan., 1946. Pp. 19.

Labor and Industrial Relations

ARCHINARD, A. *The Swiss system of compulsory extension of collective agreements.* Internat. Lab. Rev., Mar.-Apr., 1946. Pp. 15.

COHO, F. E. *Guaranteed annual wages.* N.A.C.A. Bull., July, 1946. Pp. 10.

DIXON, R. L. *Profit Sharing.* Jour. Accountancy, July, 1946. Pp. 8.

FISHER, P. *Reparation labor—a preliminary analysis.* Quart. Jour. Econ., May, 1946. Pp. 27.

KEEZER, D. M. *The National War Labor Board.* Am. Econ. Rev., June, 1946. Pp. 25.

LOW, A. R. *Wage stabilization in New Zealand.* Internat. Lab. Rev., Mar.-Apr., 1946. Pp. 16.

NORTHRUP, H. R. *The Railway Labor Act and labor disputes.* Am. Econ. Rev., June, 1946. Pp. 20.

———. *A critique of pending labor legislation.* Pol. Sci. Quart., June, 1946. Pp. 17.

PASHERSTNIK, A. E. *Problems of legal wage regulations in wartime.* Am. Rev. Soviet Union, May, 1946. Pp. 16.

REDER, M. W. *Interest and employment.* Jour. Pol. Econ., June, 1946. Pp. 15.

REYNOLDS, L. G. *Wage differences in local labor markets.* Am. Econ. Rev., June, 1946. Pp. 10.

RICHBERG, D. R. *The proposed Federal Industrial Relations Act.* Pol. Sci. Quart., June, 1946. Pp. 16.

SCHILLER, A. A. *Labor law and legislation in the Netherlands Indies.* Far East. Quart., Feb., 1946. Pp. 14.

SELEKMAN, B. M. *Wanted: mature labor leaders.* Harvard Bus. Rev., Summer, 1946. Pp. 22.

STIGLER, G. J. *The economics of minimum wage legislation.* Am. Econ. Rev., June, 1946. Pp. 8.

VAN SICKLE, J. V. *The international labor office: an appraisal.* Southern Econ. Jour., Apr., 1946. Pp. 8.

Wage policy, and the role of fact-finding boards. Mo. Lab. Rev., Apr., 1946. Pp. 13.

Work stoppages caused by labor-management disputes in 1945. Mo. Lab. Rev., May, 1946. Pp. 18.

Workers' experiences during first phase of reconversion. Mo. Lab. Rev., May, 1946. Pp. 11.

Consumption; Coöperation

RABINOWITCH, G. *Cooperatives in the U.S.S.R.* Am. Rev. Soviet Union, May, 1946. Pp. 11.

SCHICKELE, R. *The national food allotment program.* Jour. Farm Econ., May, 1946. Pp. 19.

Population; Migration; Vital Statistics

BOWLEY, A. L. *Rural population in England and Wales, 1911 and 1931.* Economica, May, 1946. Pp. 22.

FRANKEL, H. *The industrial distribution of the population of Great Britain in July, 1939.* Jour. Royal Stat. Soc., Vol. CVIII, Pts. III–IV, 1945. Pp. 39.

Unclassified Items

HAYEK, F. A. *The London School of Economics,* 1895–1945. Economica, Feb., 1946. Pp. 31.

NOTES

Editor's Note

Miss Doris Merriam, formerly recorder and editor of Williams College, has been appointed assistant to the managing editor in place of Miss Mary Connally, whose resignation was announced in the June number.

Beginning with this number, the address of the editorial office will be Goldwin Smith Hall, Cornell University, Ithaca, N. Y.

Arrangements have been made to hold the annual meeting of the American Economic Association at Atlantic City, January 24–27, 1947. Professor J. Weldon Hoot, of the Wharton School of Finance and Commerce, University of Pennsylvania, has been appointed as local arrangements representative.

The following persons have recently become members of the American Economic Association:

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The Committee on Research in the Social Sciences, Australian National Research Council, has initiated Australian Social Science Abstracts. Copies can be obtained from the editor, Faculty of Commerce, University of Melbourne, Carlton N.3., for a subscription of 4/- per annum.

Robert S. Aspinwall died December 16, 1945.

Edwin F. Dummeier, a member of the faculty of Washington State College, Pullman, passed away on June 17.

Corliss L. Parry, who had for several years taught at Ohio State University and Columbia University, died June 30, at the age of 45. Well known in insurance and teaching circles as an authority on the economics of finance and investment, he was for the last fifteen years on the economic research staff at the home office of the Metropolitan Life Insurance Company. At the time of his death he was a senior research associate there.

Leonard J. Salter, Jr., associate professor in agricultural economics at the University of Wisconsin, perished with his wife, Gertrude Salter, and their only child, Leonard J. Salter, III, in the Hotel LaSalle fire in Chicago on June 5.

Appointments and Resignations

Albert Abrahamson, who has been on leave as assistant to the Secretary of Labor, is returning to Bowdoin College for the fall trimester.

George P. Adams, Jr., has returned to Cornell University after two years' service with the Department of State.

Lewis W. Adams returned to the faculty of Washington and Lee University in June after service in the Navy.

V. Norman Albrecht has left government service to join the staff of the University of Minnesota as instructor in economics.

Sidney S. Alexander has been appointed assistant professor in the department of economics, Harvard University, upon his return from the Office of Strategic Services.

Eugen Altschul, who served various government agencies during the war while on leave of absence from the University of Minnesota, has been appointed to the Harzfeld professorship of economics at the University of Kansas City.

Vance Q. Alvis, of the University of Virginia, has been appointed assistant professor of economics at the University of Arkansas.

Paul S. Anderson has joined the faculty of the University of Minnesota as an instructor in economics.

William H. Anderson, of the University of Wisconsin, has been appointed associate professor of economics at the University of Southern California.

Charles P. Anson has been appointed head of the department of economics and business administration at Alabama Polytechnic Institute.

Hans Apel has been promoted from instructor to assistant professor of economics in the College of Business Administration of Boston University.

Robert S. Aries has been appointed director of the Northeastern Wood Utilization Council.

E. Burl Austin has joined the faculty of the University of Florida as associate professor of accounting after three years' service in the Armed Forces.

G. L. Bach, who has been on military leave from the Division of Research of the Federal Reserve Board, is now professor and head of the department of economics, Carnegie Institute of Technology.

William H. Baughn, who has been on leave in the Army Air Forces, resumed his position as instructor in rural social economics at the University of Virginia in June.

Richard F. Behrendt is now professor of international affairs at Colgate University.

Konrad Bekker, on leave from the University of Kentucky while serving as Lieutenant in the Army, has resigned as instructor in economics to accept a position in the State Department.

David W. Belcher has been appointed instructor in economics at the University of Minnesota.

Douglas Bellemore, formerly head of the finance department of the University of Toledo and more recently Lieutenant Commander in the Navy, has joined the staff of the economics department at Boston University as associate professor.

Julio N. Berrettoni, formerly of the University of Minnesota, has been appointed assistant professor in the department of economics and sociology at Iowa State College.

Joseph Biery has been appointed associate professor of accounting at the University of Kansas.

Francis M. Boddy has been promoted to the rank of professor at the University of Minnesota.

Arthur M. Borak has returned to his position as associate professor of economics at the University of Minnesota after eighteen months' service at the Army University in Biarritz and at training schools in Germany.

Daniel Borth, Jr., has been made associate professor of accounting, School of Business, University of Chicago.

Kenneth E. Boulding, of Iowa State College, has been appointed chairman of the department of economics and political science, McGill University.

Philip D. Bradley, assistant professor of economics at Harvard University, has been granted a leave of absence for one year from September 1, 1946, having been awarded a Guggenheim Foundation Fellowship which will take him to Latin America for the investigation of public finances.

Buford Brandis, formerly a member of the research staff of the Federal Reserve Bank of Atlanta, is now associate professor of business administration at the School of Business Administration of Emory University.

Paul P. Brown has resigned as assistant professor of marketing at the University of North Carolina.

Yale Brozen, formerly of the Illinois Institute of Technology, has been appointed associate professor of economics at the University of Minnesota.

Franklin L. Burdette, of Butler University, has been appointed associate professor of government and politics in the College of Business and Public Administration, University of Maryland.

Jesse V. Burkhead has left the Bureau of the Budget to accept a position as assistant professor of finance at Lehigh University.

Robert S. Bussell is now assistant professor of marketing at the Oklahoma Agricultural and Mechanic College.

Grant H. Calder has been promoted to the rank of assistant professor in the School of Business, University of Utah.

R. P. Calhoon, formerly personnel manager of Kendall Mills, has been appointed professor of personnel management at the University of North Carolina.

Chris D. Calsoyas has been appointed instructor in economics at Yale University.

C. C. Carter has been appointed associate professor of business law in the School of Commerce of the University of North Carolina.

James E. Chace has been promoted from acting head to head professor of the department of real estate, University of Florida.

A. Hamilton Chute has resigned his position at the University of Minnesota to become professor of marketing at the University of Toledo.

W. W. Cook has resigned from Marysville State Teachers College to become associate professor of marketing at Kansas State College.

William W. Cooper has resigned as instructor in economics in the College of the University of Chicago to be assistant professor of economics at Carnegie Institute of Technology.

John M. Crawford, formerly with the Division of Research of the Federal Reserve Board and recently released from active duty as Lieutenant Commander in the United States Public Health Service, has become assistant professor of economics at Carnegie Institute of Technology.

A. W. Currie, formerly of the University of British Columbia and of the Department of Reconstruction in Ottawa, has joined the staff of the department of political economy, University of Toronto.

Roy E. Curtis, formerly dean of the School of Business and Public Administration, has returned to the University of Missouri as professor of economics after serving with the Office of Price Administration during the war.

H. H. Cutler has been promoted to associate professor in the School of Business, University of Utah.

Amando M. Dalisay, senior agricultural economist for the past two years in the Office of the President of the Philippines in Washington, has been appointed special assistant and chief of division in the Office of Foreign Relations of the Philippine government, Manila.

Melvin G. De Chazeau, formerly associate professor of economics at the University of Virginia, has resigned to accept a position as professor in economics at the University of Chicago.

Merrill DeVoe has been appointed associate professor of marketing at the University of Kentucky.

Catherine Di Gioia has been appointed instructor in sociology, New Jersey College for Women.

Richard P. Doherty, on leave of absence from 1943–45 to serve as emergency fuel and food administrator for the State of Massachusetts, has been named head of the department of economics at Boston University.

Evsey D. Domar has resigned from the Division of Research and Statistics of the Federal Reserve Board and has become assistant professor of economics at Carnegie Institute of Technology, after serving as visiting lecturer in economics at the University of Michigan during the summer.

Elvin F. Donaldson has been promoted to the rank of professor of business organization at the Ohio State University.

C. H. Donovan, formerly Lieutenant Commander in the Navy, has returned to the University of Florida as associate professor of economics.

Francis Doody, formerly instructor at Massachusetts Institute of Technology and more recently Lieutenant in the Navy, has been named assistant professor of economics at Boston University.

Thomas W. Douglas, recently instructor in commerce at the University of Pennsylvania, has been appointed assistant professor of commerce at the University of Virginia.

Acheson J. Duncan has been appointed associate professor of political economy at the Johns Hopkins University.

R. Y. Durand has been appointed assistant professor of business administration at the University of North Carolina.

G. A. Elliott, of the University of Alberta, has joined the staff of the department of political economy at the University of Toronto.

Herman A. Ellis, who has been a research assistant in the Bureau of Business Research, is now assistant professor of economics at the University of Kentucky.

Howard S. Ellis, since 1943 assistant director, Division of Research and Statistics of the Federal Reserve Board, has returned to the University of California as professor of economics.

Elden J. Facer has been promoted to assistant professor in the School of Business, University of Utah.

Robert H. Ferguson has returned to Cornell University as teaching associate after serving in the Army.

J. S. Floyd has been appointed instructor of economics at the University of North Carolina.

Robert J. Fowks, who served as Lieutenant in the Army, has gone to the University of Missouri as assistant professor of economics.

Arthur M. Freedman has been appointed instructor of economics at Brown University.

John L. Fulmer resumed his duties as associate professor of rural economics at the University of Virginia in November, 1945 after more than four years' service in the Army.

Louis Gaitanis has taken a position as assistant professor of economics at the University of Florida following five years' service with the Social Security Administration.

Dr. Roy L. Garis, of Vanderbilt University, has been appointed professor of economics at the University of Southern California.

Burton Gildersleeve has resigned his position at the Ohio State University to become associate professor of banking at the University of Oklahoma.

Richard M. Goodwin has been appointed assistant professor in the department of economics, Harvard University.

George C. Grosscup, Jr., has become a member of the staff of the department of commerce and economics of the University of Vermont as assistant professor.

P. N. Guthrie has accepted a position as professor of economics at the University of North Carolina.

W. E. Haisley has been appointed instructor of economics at the University of North Carolina.

Franklin P. Hall has resigned from the International Economics Division, Office of Business Economics, Department of Commerce, to accept an appointment to the department of economics, Clark University.

Edwin W. Hanczaryk is an instructor in economics at Brown University.

Morrison Handsaker has been appointed chairman of the economics department of Lafayette College.

Harold E. Hardy, formerly of the University of Missouri, has been named lecturer in marketing at the University of Minnesota.

Seymour E. Harris has been promoted to professor in the department of economics, Harvard University.

Robert D. Haun, on leave of absence while serving as price executive with the Office of Price Administration, has returned to the University of Kentucky.

Earl O. Heady has been promoted from assistant professor to associate professor at Iowa State College.

Walter W. Heller, formerly assistant to the director of the Division of Tax Research of the Treasury, has joined the faculty of the University of Minnesota as associate professor of economics.

John S. Henderson, of Carnegie School of Technology, has been appointed assistant professor of economics and statistics at the University of Florida.

Oscar E. Heskin, formerly with the American Embassy in Oslo, Norway, has returned to the University of Florida as professor of economics.

Paul T. Homan is returning to Cornell University at the beginning of the fall semester after several years' service with the War Production Board, UNRRA, and the War Assets Administration.

Edwin H. Howard returned to the faculty of Washington and Lee University in June after having served with the Office of Price Administration in Roanoke.

Don Humphrey, chief economic adviser for the Office of Military Government in Berlin, has been granted an extension of his leave of absence from Duke University until February, 1947.

Huber C. Hurst is resuming his teaching as professor of business law at the University of Florida after service with the Armed Forces and with the Veterans' Administration.

Leonid Hurwicz, formerly with the Cowles Commission at the University of Chicago, has taken up his duties as associate professor in the department of economics and sociology at Iowa State College.

John G. B. Hutchins has returned to Cornell University after having served since 1942 with the War Shipping Administration.

Charles D. Hyson has been appointed instructor in the department of economics, Harvard University.

John R. Immer, of the University of Illinois, has joined the faculty of the University of Minnesota as assistant professor in the field of industrial management.

Elmo Jackson, formerly instructor at Harvard and more recently in the Armed Forces, has been appointed associate professor of economics and statistics at the University of Florida.

John E. Jeuck has been appointed instructor in marketing in the School of Business, University of Chicago.

Gaston Jeze, professor emeritus of public finance and public law at the University of Paris and an honorary member of the American Economic Association (1926), in a recent letter gives moving details of his life during the war. Professor Jeze, an outstanding public figure in France, and his daughter, were imprisoned because they refused to collaborate with the Vichy regime. When the Germans marched into Paris he fled to the South. He was persecuted and robbed during the occupation. He returned to Paris in April of this year and has already published the first postwar issue of his well-known quarterly, *Revue de Science et de Législation Financières*. Friends of Professor Jeze, many of whom have inquired about his fate, will be pleased to hear that he has taken up residence again at his old home, 126 Blvd. Montparnasse, Paris. While most of his property has been stolen by the Germans, his famous private library is still intact. Although Professor Jeze is 77 years old, he has resumed his activities as editor and writer and intends to continue the work which was interrupted by the war.

Lewis K. Johnson has been promoted from assistant professor to associate professor of commerce at Washington and Lee University.

J. A. Johnston, head of the department of accounting at the University of Utah, retired in June.

M. J. Jucius has been promoted to the rank of professor of business organization at the Ohio State University.

Frank S. Kaulback, Jr., has been appointed assistant professor of accounting at the University of Virginia.

James W. Kelley, on leave of absence for three years while serving as analyst in the Bureau of Labor Statistics, has returned to Boston University as associate professor of economics.

Leonard A. Kent has been appointed instructor in statistics in the School of Business, University of Chicago.

Marshall D. Ketchum has resigned as professor of economics at the University of Kentucky to accept a position at the University of Chicago.

C. A. Kirkpatrick has been appointed associate professor of marketing at the University of North Carolina.

H. E. Klontz has resigned as instructor in economics at the University of North Carolina to accept an associate professorship in economics at Alabama Polytechnic Institute.

F. J. Kottke has been appointed associate professor of economics at the University of North Carolina.

B. C. Lemke has been promoted from assistant professor to associate professor at Iowa State College.

Wassily Leontief has been promoted to professor in the department of economics, Harvard University.

J. Wayne Ley has been promoted to the rank of professor of business organization and has

assumed duties as assistant dean of the College of Commerce and Administration at the Ohio State University.

Charles E. Lindblom has been appointed assistant professor of economics at Yale University.

Michael F. M. Lindsay has been appointed lecturer in the department of economics, Harvard University.

C. L. Littlefield, of the University of Louisiana, has been made instructor of business organization at the Ohio State University.

Richard E. Lundquist is returning to the staff of the School of Business Administration at the University of Minnesota following a year's study at Northwestern University.

Joseph O. McClintic has been made associate professor of economics at San Diego State College.

John B. McFerrin was promoted from associate professor to professor of economics at the University of Florida upon his return from service in the Navy.

Clarence McGregor has resigned from the research staff of the Federal Reserve Bank of Kansas City to accept a position as professor of marketing at the University of North Carolina.

Jess McNish, of the University of Nebraska, has gone to the University of Kansas as instructor in business law.

James R. McPherson has joined the staff of Boston University as instructor in economics after service with the Armed Forces.

Robert C. Manhart, who has been on leave from the University of Missouri working with the Sylvania Electric Products Inc., has returned as associate professor of economics.

Yves R. Maroni is an instructor of economics at Brown University.

Donald B. Marsh has been granted a year's leave of absence from the department of economics of Barnard College.

D. F. Martin has resigned as assistant professor of economics at the University of North Carolina to continue his work as economic analyst with the Allied Military Government in Berlin.

Gordon L. Mattson, recently discharged from the Navy, has returned to the University of Minnesota as instructor in economics and accounting.

Ellis C. Maxcy, general personnel relations supervisor of the Southern New England Telephone Company, has been appointed lecturer in economics at Yale University.

Lloyd A. Metzler, formerly with the Division of Research and Statistics, Board of Governors of the Federal Reserve System, Washington, has been appointed assistant professor of economics at Yale University.

Allen Meyer is serving as secretary of the College of Commerce and Administration at the Ohio State University in addition to his duties as assistant professor of business organization.

Raymond F. Mikesell, formerly assistant professor of economics at the University of Washington and recently head economist in the Monetary Research Division of the Treasury, has been appointed associate professor of economics at the University of Virginia.

Robert B. Miner has returned from the Army University of Okinawa to become instructor of business organization at the Ohio State University.

George M. Modlin has been appointed president of the University of Richmond.

Donald A. Moore has been appointed instructor of economics at Brown University.

Kenneth V. Moses has been appointed instructor in business law at the University of Kansas.

Herbert Newman, of the University of Delaware, has been made associate professor of economics at the University of Florida.

Hermann C. Nolen has been promoted to the rank of professor of business organization at the Ohio State University.

Paul M. O'Leary has been appointed dean of the new School of Business and Public Administration at Cornell University.

Edgar Z. Palmer has resigned as professor of economics at the University of Kentucky to accept a position at the University of Nebraska.

Andreas G. Papandreou was made instructor in the department of economics, Harvard University, upon his return from the service.

W. W. Pate has accepted an appointment as instructor in economics at the University of North Carolina.

Raymond J. Penn has been assistant professor in agricultural economics at the University of Wisconsin since February.

Robert B. Pettengill is director of the Teaching Institute of Economics, operated under a grant from the Alfred P. Sloan Foundation, Inc., at the University of Southern California.

Clyde W. Phelps, formerly head of the department of economics and commerce at the University of Chattanooga, has joined the staff of the department of economics at the University of Southern California.

M. Ogden Phillips, of Washington and Lee University, was visiting professor of economic geography at Columbia University during the summer.

Ralph D. Pickett, head of the Department of commerce at Kansas State Teachers College, has been appointed professor of economics at the University of Kentucky.

A. W. Pierpont has taken up duties as instructor in economics at the University of North Carolina.

William H. Pierson has been appointed associate professor of geography at the University of Florida.

Neal Potter, formerly acting chief of the income analysis section, Office of Price Administration, is an instructor in economics at Carnegie Institute of Technology.

Richard Powers, of the University of Virginia, has accepted a position as assistant professor of economics at Clemson College.

William McC. Pritchett, of the University of Virginia, has accepted a position as assistant agricultural economist with the Federal Reserve Bank of Dallas.

Jewell J. Rasmussen has been promoted to the rank of assistant professor in the School of Business, University of Utah.

Melvin Reder has resigned as research associate in the Money Flows Project of the National Bureau of Economic Research to become assistant professor of economics at Carnegie Institute of Technology.

Charles F. Reynolds, Jr., of the University of Virginia, has accepted a position as agricultural economist with the Federal Reserve Bank of Atlanta.

Gaines M. Rogers, of the University of Virginia, has been made assistant professor of economics at Baylor University.

Benjamin A. Rogge, formerly a member of the faculty of the University of Nebraska, has joined the staff of the department of economics at the University of Minnesota as an instructor.

R. H. Rowntree has resigned his position as assistant professor of economics at the Ohio State University to continue his work with the Department of Commerce.

A. W. Sadler has been appointed associate professor of accounting at the University of North Carolina.

G. T. Schwenning has resumed his duties as professor of business administration at the University of North Carolina following his release as director of the business management section of the Armed Forces University at Shrivenham, England.

William B. Seiniger, recently a lieutenant in the Army, has been appointed instructor in marketing in the College of Business and Public Administration, University of Maryland.

Joseph E. Shafer, of the University of Akron, has been appointed head of the department of economics and business administration at the University of New Hampshire.

Nelson C. Shafer, Jr., formerly of the Indiana University, has been made instructor in marketing at the University of Kansas.

Eli Shapiro has been appointed assistant professor of business economics at the School of Business of the University of Chicago.

Murray W. Shields has been appointed associate professor of economics at the University of Florida.

Peter D. Shilland has been appointed associate professor of economics at West Virginia University.

Ronald B. Shuman has returned to his teaching duties at the University of Oklahoma as professor of business management following five years' service in the Army, in which his last assignment was as Colonel, General Staff Corps, with the Office of Military Government in Berlin, Germany.

C. Gordon Siefkin, formerly assistant to the president at Southwestern University, and more recently in charge of the program in economics at Shrivenham American University, is now professor of economics at the School of Business Administration of Emory University.

Paul B. Simpson is returning to Cornell University as teaching associate after serving in the Army.

P. P. Smith has been appointed instructor in accounting at the University of North Carolina.

Theodore H. Smith, of the University of Oklahoma, is now dean of the School of Business of the University of Montana.

Frank A. Southard, Jr., after serving in the Navy, chiefly as financial adviser at Allied Force Headquarters in Italy, has resumed his duties at Cornell University and has been appointed chairman of the department of economics.

Irving A. Spaulding has been appointed assistant professor of sociology, New Jersey College for Women.

William A. Spurr, formerly Lieutenant Commander in the Navy and more recently associate professor of statistics at the University of Chicago School of Business, has accepted a professorship at Stanford University.

Armand C. Stalnaker, who has been appointed assistant professor of business organization at the Ohio State University, will have the duties of placement director of the College of Commerce and Administration.

Hubert F. Stepp, of the University of Virginia, has been appointed assistant professor of economics at the University of Arkansas.

Robert C. Strahl, of the Ohio State University, has become assistant professor of marketing at the University of Nebraska.

Roland Stucki has been promoted to associate professor in the School of Business, University of Utah.

Sidney C. Sufrin, recently returned from London where he was with the Mission for Economic Affairs, United States Embassy, has accepted an associate professorship in business administration and economics at Syracuse University.

Janet Sundelson will be an instructor in economics at Barnard College for the coming year.

Harry W. Sundwall has been promoted to the rank of assistant professor in the School of Business, University of Utah.

Robert Tannenbaum is instructor in business economics and industrial relations in the School of Business, University of Chicago.

Albion G. Taylor has returned to his position as head of the department of economics at the College of William and Mary after a four years' leave of absence first serving the War Manpower Commission and later as chief of the Food Industries Division, Office of Labor, Department of Agriculture.

Jacob B. Taylor, professor of accounting at the Ohio State University, has assumed the position of business manager of the university.

M. D. Taylor has resigned as professor of marketing at the University of North Carolina to serve as economic analyst with the Allied Military Government in Berlin.

Howard M. Teaf, Jr., has been promoted to the rank of professor in the department of economics at Haverford College.

R. Paul Terrell has been appointed assistant professor of geography at the University of Florida.

Herman P. Thomas has been named chairman of the department of economics at the University of Richmond.

Gerhard Tintner has been promoted from associate professor to professor of economics and econometrics at Iowa State College.

William A. Tolman, who was on leave of absence while serving as price executive of the Office of Price Administration, has returned to the University of Kentucky.

Alvin E. Touhino, of the University of Wyoming, has been appointed assistant professor of accounting at the University of Kansas.

Orba F. Trayler, until recently chief of the lend-lease accounting office in Cairo, and acting chairman of the department of economics at Kenyon College during the summer term, will go to the University of Denver in the fall quarter.

J. Alden Trovillo has been appointed associate professor of industrial management at the University of Kansas.

F. W. Tuttle, who was with the War Labor Board and later with the Bureau of Labor, has resumed his duties as assistant professor of economics at the University of Florida.

Roland S. Vaile, professor of economics and marketing at the University of Minnesota, is spending a year's sabbatical leave in study and travel in California.

Edward R. Van Sant, recently returned from Chungking and Shanghai where he served with the Foreign Economic Administration, has accepted a position in the International Resources Division of the Department of State.

William J. Vatter has been promoted from assistant professor to associate professor of accounting in the University of Chicago School of Business.

Irving H. Wallace has rejoined the faculty of the University of Minnesota as instructor in economics and marketing after several years' absence in the service of the government and the Armed Forces.

Allen Wallis has been appointed professor of statistics in the School of Business, University of Chicago.

Robert B. Wentworth has joined the staff of the department of commerce and economics at the University of Vermont as instructor in economics.

Miriam E. West has been advanced from assistant professor to associate professor at New Jersey College for Women.

Fred Weston has been appointed instructor in finance in the School of Business, University of Chicago.

Francis S. Wilder, formerly economist in the Research Division of the Office of Price Administration, has been appointed visiting assistant professor at Duke University.

Richard L. Williamson, of the University of Buffalo, has become a member of the staff of the division of social sciences at Wheaton College, Illinois, as instructor in economics and business.

Robert L. Winestone, formerly of the University of Oregon, has joined the staff of the University of Minnesota as instructor in economics.

Francis Wingate has become an assistant professor of marketing at Syracuse University after serving in the Armed Forces.

John B. Woosley has been appointed head of the department of economics and commerce at the University of North Carolina.

Howard Wright has gone to the University of Florida as associate professor of accounting after having served in the Armed Forces three years.

Howard W. Wright, until recently Captain in the Army, has been appointed associate professor of accounting in the College of Business and Public Administration of the University of Maryland.

George Zeiss, Jr., of Louisiana State University, has been appointed assistant professor of business communication at the University of Kansas.

FORTY-THIRD LIST OF DOCTORAL DISSERTATIONS IN POLITICAL ECONOMY IN PROGRESS IN AMERICAN UNIVERSITIES AND COLLEGES

The first list of this kind was dated January 1, 1904, and was sent to all members, but not regularly bound in the publications. A notation as to the earlier lists, extending from 1905 to 1927, may be found in the *Review* for September, 1927, page 574. Annual lists thereafter are to be found in the September number of the *Review* for each year.

The present list specifies doctoral degrees conferred, doctoral dissertations completed and accepted by the various universities, and the theses still in preparation. The last date given is the probable date of completion. In cases where the publishers of completed dissertations were given, this information has been reported.

The list represents the status of the several theses on June 15, 1946, except for a few items later reported as completed or published.

Economic Theory; General Works

Degrees Conferred

BENJAMIN HAFSTEINN JON EIRIKSSON, Ph.D., Harvard, 1946. The nature of interest and money.

JOHN FAGG FOSTER, Ph.D., Texas, 1946. Theoretical foundations of government ownership in a capitalistic economy.

MELVIN WARREN REDER, Ph.D., Columbia, 1946. The theory of welfare economics.

JAMES HARTMAN STAUSS, Ph.D., Wisconsin, 1946. The entrepreneur: the firm.

Theses in Preparation

DANIEL K. ANDREWS, B.A., Wisconsin, 1935; M.A., 1942. An introduction to a theory of interest. 1947. *Ohio State.*

RICHARD VERNON CLEMENCE, Ph.B., Brown, 1934; M.A., 1936; A.M., Harvard, 1940. The theory of economic maturity. 1947. *Harvard.*

JOSEPH CROPSEY, A.B., Columbia, 1939; A.M., 1941. The concept of economic expansion. 1947. *Columbia.*

HAROLD S. DIAMOND, B.S., College of City of New York, 1937; A.M., Columbia, 1939. Studies in innovation theory. 1947. *Columbia.*

BERT FRANK HOSELITZ, D.Jur., Vienna, 1936; A.M., Chicago, 1945. The Austrian school of economics. 1946. *Chicago.*

MOTHER JEANNETTE KIMBALL, R.S.C.J., A.B., Barat, 1937; A.M., Marquette, 1942. The economic doctrines of John Gray (1799–1850). 1946. *Catholic.*

CLIFTON HOLLAND KREPS, JR., B.A., William and Mary, 1941; M.A., North Carolina, 1942. A study in economic analysis under conditions of less-than-full employment. 1947. *Duke.*

ARTHUR LEIGH, B.A., Colgate, 1941. Studies in the development of the theory of capital and interest from Locke to Walras. 1946. *Chicago.*

JAMES WILDON LONGLEY, B.A., Texas Agricultural and Mechanical, 1936; M.S., 1937; M.A., Harvard, 1936. Sismondi, predecessor of Karl Marx and John M. Keynes. *Harvard.*

CHRISTINE HARRISON MCGUIRE, B.A., Muskingum, 1937; M.A., Ohio State, 1938. Economic incentives. 1946. *Chicago.*

JAMES N. MORGAN, B.A., Northwestern, 1939; M.A., Harvard, 1941. The elimination of unearned gains and losses. 1947. *Harvard.*

RICHARD E. MULCAHY, B.A., Gonzaga, 1939; M.A., 1940. The economic theories of Heinrich Pesch. 1947. *California.*

CLARENCE EDWARD PHILBROOK, B.A., Chicago, 1936. The policy implications of the theoretical controversy over the effects of rigid wages. 1947. *Chicago.*

LEONARD HENRY RALL, B.A., Nebraska, 1935; M.A., 1937. A critical analysis of some of the aspects of the theory of the mature economy. 1946. *Wisconsin.*

EUGENE ROTWEIN, B.A. and M.A., Wisconsin, 1939. The political economy and economic philosophy of David Hume. 1946. *Chicago.*

ARNOLD WILLIAM SAMETZ, B.A., Brooklyn, 1940; M.A., Princeton, 1942. The mature economy. 1947. *Princeton.*

GEORGE SCHULLER, B.S., New York, 1931; M.A., 1934. Bargaining power and its effects on prices and income. 1947. *Columbia.*

BERNICE SHOUL, B.A. Radcliffe, 1941; M.A., Columbia, 1943; M.A., Radcliffe, 1945. Breakdown theory in Marx. *Harvard.*

HARLAN MONELL SMITH, B.A., Chicago, 1936; M.A., 1938. The price mechanism and the concept of social value. 1946. *Chicago.*

ALVA MORRIS TUTTLE, B.A., Butler, 1923; M.S., Iowa State, 1928. Wage determination: a theoretical and statistical analysis. 1947. *Ohio State.*

Economic History

Degrees Conferred

FELICIA JOHNSON DEYRUP, Ph.D., Columbia, 1946. Arms makers of the Connecticut Valley.

JAMES HAROLD EASTERBY, Ph.D., Chicago, 1945. The South Carolina rice plantation.

ROBERT MOFFETT HALE, Ph.D., Chicago, 1945. The United States and Japanese immigration.

Theses in Preparation

WILLIAM HUBERT BAUGHN, B.S., Alabama, 1940; M.A., Virginia, 1941. Virginia's economic development. 1947. *Virginia.*

SHIRLEY AKERMAN BILL, B.A., Chicago, 1941; M.A., 1942. The meaning and background of the inter-state comity provision of the federal constitution. 1946. *Chicago.*

WILLIAM R. BRAISTED, B.A., Stanford, 1939; M.A., Chicago, 1940. The development of the Pacific as an American naval problem before 1909. 1946. *Chicago.*

JOSEPH L. FISHER, B.S., Bowdoin, 1935; M.A., Harvard, 1938. The economic development of Alaska. 1947. *Harvard.*

HENRI FOLMER, M.A., Denver, 1939. French expansion in the trans-Mississippi Southwest during the eighteenth century. 1946. *Chicago.*

ABRAHAM LOUIS GITLOW, B.A., Pennsylvania, 1939; M.A., Columbia, 1940. Economic history of a South Sea island. 1947. *Columbia.*

HARRY FRANKLIN JACKSON, B.A., Marshall, 1933; M.A., West Virginia, 1937. Technological development of Central America to 1907. 1946. *Chicago.*

GALE WILLIAM MCGEE, B.A., Nebraska State Teachers, 1936; M.A., Colorado, 1939. Offers of alliance from the Great Powers to the United States 1789–1823. 1946. *Chicago.*

WILLIAM HARVEY MAEHL, B.S., Northwestern, 1937; M.A., 1939. The German Social Democratic party and the idea of international cooperation, 1918–32. 1946. *Chicago.*

EDWARD MARZ, Dipl. Bus. Adm., Vienna, 1933; Dipl. Pol. Econ., 1937; M.A., Harvard, 1943. An economic history of the Austrian Republic. 1946. *Harvard.*

MARTHA C. MITCHELL, B.A., Alabama, 1943; M.A., Chicago, 1944. A history of Birmingham, Alabama. 1946. *Chicago.*

BEATRICE TREIMAN, B.A., Chicago, 1939; M.A., 1943. Franco-American commerce, 1778–89. 1946. *Chicago.*

National Economies

Degrees Conferred

WILLIAM CHARLES CHAMBERLIN, Ph.D., Columbia, 1946. Economic development of Iceland through World War II.

ROBERT RAY DOCKSON, Ph.D., Southern California, 1946. A study of Japan's economic influence in Manchuria, 1931–41.

HELMUT HIRSCH, Ph.D., Chicago, 1945. Th Saar territory.

SAMUEL LURIÈ, Ph.D., Columbia, 1946. Private investment in a controlled economy: the case of the Nazi economy in its pre-war phase.

EASTIN NELSON, Ph.D., Texas, 1946. The development of economic policy in the Republic of Panama.

Theses in Preparation

SIMEON HUTNER, B.A., Columbia, 1937; M.B.A., New York, 1940. The war economy in nazi Germany. 1947. *Princeton.*

FRANCIS PERLEY TAYLOR MACKINNON, B.A., McGill, 1941; M.A., Toronto, 1942. Government of Prince Edward Island. *Toronto.*

JACK B. PFEIFFER, B.A., Bradley Technology, 1942; M.A., Chicago, 1945. The dawn of manufacturing in Chile. 1946. *Chicago.*

DAVID M. PLETCHER, B.A., and M.A., Chicago, 1941. The development of northwestern Mexico. 1946. *Chicago.*

COY HOYT PRICE, B.S., Virginia, 1938. A study in the economic control of Germany. 1947. *Virginia.*

ELIZABETH MARIE ROSENGREN, B.A., Alberta, 1940; M.A., Toronto, 1942. Wartime controls in Canada. 1947. *Columbia.*

LEONA S. TROTTA, B.A., New York, 1931; M.A., Columbia, 1935. The labor situation in Italy at the close of the first world war and how it paved the way for fascism. 1947. *Columbia.*

NORMAN MCQUEEN WARD, B.A., McMaster, 1941; M.A., Toronto, 1943. Development of government activity in Nova Scotia. *Toronto.*

Statistical Methods; Econometrics; Economic Mathematics; Accounting

Degree Conferred

WILLIAM JOSEPH VATTER, Ph.D., Chicago, 1946. The fund theory of accounting and its implications for financial reports.

Theses in Preparation

REV. DUMAS LEON MCCLEARY, C.S.V., B.S., St. Viator, 1935; M.A., Catholic, 1945. Uniform accounting systems for parishes. *Catholic.*

C. R. NISWONGER, B.S., Miami, 1929; M.S., Illinois, 1931. Accounting for surplus reserves. 1947. *Ohio State.*

JOHN T. WHEELER, B.B.A., Minnesota, 1942. Cost methods and empirical cost functions 1947. *Massachusetts Institute of Technology.*

National Income and Product; Income Distribution; Consumption Statistics

Degrees Conferred

MILTON FRIEDMAN, Ph.D., Columbia, 1946. Income from independent professional practice.

GEORGE JASZI, Ph.D., Harvard, 1946. The concept of national income and national product, with special reference to government transactions.

Theses in Preparation

JANET AUSTRIAN, B.A., Bennington, 1939. Measurement of economic stability: an analysis of consumer income and expenditure by age groups, 1935–36. 1948. *Columbia.*

HARLOW W. HALVORSON, B.S., Minnesota, 1938; M.A., 1940. A study of agricultural income and its relation to national income. 1947. *Minnesota.*

JOHN HOLROYD KEMPSTER, B.S., Missouri, 1938; M.B.A., Chicago, 1939. Accounting principles and the measurement of national income. 1947. *Massachusetts Institute of Technology.*

GEORGE MERVYN KLEINER, B.A., McGill, 1936; M.A., 1937. An analysis of employment and income in the 5th Federal Reserve District 1930–40. 1946. *Wisconsin.*

Business Cycles and Fluctuations

Degrees Conferred

NATHAN BELFER, Ph.D., Harvard, 1946. Technical change and technological unemployment.

ALFRED NICOLS, Ph.D., Harvard, 1946. Cyclical adjustments under oligopoly.

Thesis Completed and Accepted

KENNETH D. ROOSE, B.A., Southern California, 1940. The recession of 1937–38. *Yale.*

Theses in Preparation

RENDIGS T. FELS, B.A., Harvard, 1939; M.A., Columbia, 1940. History of American business cycles, 1865–1939. 1948. *Harvard.*

WILLIAM HAMOVITCH, B.Com., McGill, 1943; M.P.A., Harvard, 1945; M.A., 1946. Wages in the business cycle. 1947. *Harvard.*

WENDELL DEADY HANCE, B.S., Northwestern, 1935; M.A., Harvard, 1942. The secular change in investment with particular reference to the automobile industry. *Harvard.*

EVAN BOND HANNAY, B.A., Washington, 1936; M.A., Stanford, 1937. The machine tool industry in relation to business fluctuations. 1947. *Princeton.*

ELINOR RUTH HARRIS, B.A., Mt. Holyoke, 1944; M.A., Radcliffe, 1945. Rate of interest and management of the public debt. *Harvard.*

GABRIEL SYLFEST HAUGE, B.A., Concordia, 1935; M.A., Harvard, 1938. Banking aspects of Treasury borrowing in World War II. 1946. *Harvard.*

JAMES EARL HICKS, B.A., Washington and Lee, 1936; M.A., North Carolina. Certain aspects of inflation in Italy. 1948. *North Carolina.*

LEONID HURWICZ, LL.M., Warsaw, 1938. Basic postulates of the theory of economic fluctuations and their relation to empirical evidence. 1946. *Chicago.*

ROBERT PAUL SHAY, B.S., Virginia, 1944. A study of overemployment equilibrium. 1947. *Virginia.*

JAMES TOBIN, B.A., Harvard, 1939; M.A., 1940. Demand forecasting. 1947. *Harvard.*

CHARLES S. WYAND, B.A., Pennsylvania State, 1939; M.A., 1944. The economics of replacement demand. 1948. *Columbia.*

Public Finance; Fiscal Policy; Taxation

Degrees Conferred

LUCILE DERRICK, Ph.D., Chicago, 1946. Tax exemption of security interest from income taxes in the United States: an economic and statistical analysis.

M. LOUISE FREIER, Ph.D., Massachusetts Institute of Technology, 1946. The United States excess profits tax in World War II.

THAD LEWIS HUNGATE, Ph.D., Columbia, 1946. Financing the future of higher education.

FRANK SANFORD KAULBACK, JR., Ph.D., Virginia, 1945. The federal budget as an instrument of fiscal control.

HERBERT ELIAS KLARMAN, Ph.D., Wisconsin, 1946. Income taxation in the states.

JOHN VIRGIL LINTNER, JR., Ph.D., Harvard, 1946. Tax restrictions on financing business expansion.

EUGENE ABRAHAM MYERS, Ph.D., Pittsburgh, 1946. History of tax legislation in Pennsylvania up to 1873.

GAINES MADISON ROGERS, Ph.D., Virginia, 1946. A study of carrier tax burdens.

ALFRED CHIEH-CHING TAO, Ph.D., Harvard, 1946. A study of the tax structure in China.

Theses Completed and Accepted

LYLE C. FITCH, B.S., Nebraska State Teachers, 1935; M.A., Nebraska, 1938. Taxing municipal bond income. *Columbia.*

MARGARET M. GARRITSEN, B.A., Michigan, 1943. Some theoretical and practical problems in the management of the federal debt in the postwar period. 1946. *Massachusetts Institute of Technology.*

PAUL EDWARD HANCHETT, B.A., Minnesota, 1937; B.S., 1939; M.A., 1941. Federal income taxation of cooperative associations and their patrons. 1946. *Minnesota.*

NORMAN H. LEONARD, B.A., American, 1939. Public debt management. *Yale.*

WILLIAM SPENCER VICKREY, B.S., Yale, 1935; M.A., Columbia, 1937. Agenda for progressive taxation. *Columbia.*

Theses in Preparation

LOWELL DEWITT ASHBY, B.A., Hastings, 1936; M.A., Nebraska, 1938. The development of the national economic budget. 1946. *Wisconsin.*

ROSEMARY WILEY BRADLEY, B.A., Lawrence, 1935; M.A., Radcliffe, 1939. Mexican public debt. *Harvard.*

GERARD MARION BRANNON, B.A., Georgetown, 1943; M.A., 1944; M.A., Harvard, 1946. Uncertainty in fiscal policy planning. 1947. *Harvard.*

EUGENE CLARK, B.A., Swarthmore, 1939; M.A., Harvard, 1941. The status of farmer cooperatives under the federal income tax. 1946. *Harvard.*

ROBERT MILLS CLARK, B.Com., British Columbia, 1941; B.A., 1942; M.A., Harvard, 1944. Some aspects of the development of the personal income tax in the province and municipalities of Canada up to 1930. *Harvard.*

JACOB COHEN, B.A., Manitoba, 1940; M.A., Cincinnati, 1941. The fundamental similarities and differences in public and private debts. 1946. *Chicago.*

ARTHUR LEE CUNKLE, B.A., Arkansas State Teachers, 1938; M.A., Kansas, 1939. Recent trends in property taxation in the United States. 1947. *Virginia.*

H. H. CUTLER, B.S., Utah State, 1933; M.S., Iowa State, 1934. A study of property tax levies in Utah. 1947. *Iowa State.*

WILLIAM PYRLE DILLINGHAM, B.A.E., Florida, 1934; M.S., Tennessee, 1942. Federal aid to veterans in the United States, 1917–46. 1947. *Duke.*

CHARLES H. DUFTON, B.A., Yale, 1934; M.A., Michigan, 1936. The federal budget as an economizing instrumentality—a study of techniques in budgeting recently advocated for full employment fiscal policy. 1947. *Harvard.*

GENE LLOYD ERION, B.A., Doane, 1939; M.A., Wisconsin, 1940. The probable effects of the future use of the federal debt in cycle policy. 1947. *Wisconsin.*

RICHARD BENJAMIN GOODE, B.A., Baylor, 1937; M.A., Kentucky, 1939. An economic analysis of the federal corporate income tax. 1947. *Wisconsin.*

BYRON LINDBERG JOHNSON, S.B., Iowa State, 1938; Ph.M., Wisconsin, 1940. Federal aid to the states. 1947. *Wisconsin.*

JAMES RUDOLPH KAY, B.A., Birmingham-Southern, 1938. Fiscal and monetary policy in the war period. 1947. *Virginia.*

RANDALL T. KLEMME, B.A., Grinnell, 1932. The graduated land tax. 1946. *Iowa State.*

DONALD WILLIAM O'CONNELL, B.A., Columbia, 1937; M.A., 1938. Evaluation of public borrowing. 1947. *Columbia.*

JEWELL JENS RASMUSSEN, B.S., Utah, 1934; M.S., 1936. Severance taxation in Utah. 1947. *Stanford.*

RALPH IRA THAYER, B.A., Northwestern, 1937; M.A., Washington, 1944. Recent fiscal policies in the State of Washington. 1946. *Stanford.*

ALICE JOHN VANDERMEULEN, B.A., Bryn Mawr, 1939; M.A., Radcliffe, 1945. A case history in New England town finance. *Harvard.*

Money and Banking; Short-Term Credit

Degrees Conferred

AMANDO MUNSAYAC DALISAY, Ph.D., Harvard, 1946. Supervised credit for low-income farm groups in the United States.

ELI SHAPIRO, Ph.D., Columbia, 1946. Credit union development in Wisconsin. (Published as No. 525, Columbia Studies in History, Economics, and Public Law.)

Theses in Preparation

WILLIAM O. ANDERSON, B.S., Ohio State, 1938; M.A., 1941. An analysis of bank deposits. 1947. *Ohio State.*

SISTER MARY ALEXINE BEATTY, S.S.J., B.A., Boston College, 1939; M.A., Catholic, 1942. Bank failures in the District of Columbia, 1900–1945. *Catholic.*

WILLIAM CASTLE BRADFORD, B.S., Syracuse, 1942; M.A., 1944; M.A., Harvard, 1946. Secular changes in the velocity of money. *Harvard.*

ARTHUR BRICKNER, M.S., Columbia, 1941. Monetary controls. 1947. *Columbia.*

C. K. CHOW, B.A., Ohio Wesleyan, 1941; M.B.A., Ohio State, 1943. Factors determining the monetary unit. 1947. *Ohio State.*

DONALD A. FERGUSSON, B.A., Dalhousie, 1932; M.B.A., Chicago, 1945. A reconsideration of the functions and organization of the Federal Reserve System. 1946. *Chicago.*

BURTON H. GILDERSLEEVE, B.S., Iowa, 1926; M.B.A., New York, 1933. Problems involved in the financing of commercial banks. 1948. *Ohio State.*

WILLIAM E. KOENKER, B.A., North Dakota Teachers College, 1934; M.A., North Dakota, 1938. A study of bank failures in North Dakota, 1920–35. 1948. *Ohio State.*

RUSSELL CRAIG MCIVOR, B.A., Western Ontario, 1937; M.A., Chicago, 1939. Monetary expansion in Canadian war finance, 1939–45. 1947. *Chicago.*

GORDON WELLS MCKINLEY, B.A., McMaster, 1938; M.A., Ohio State, 1940. The development of monetary and banking theory in the United States since 1930. 1947. *Ohio State.*

WILBUR T. MEEK, B.A., Princeton, 1922. A history of Mexican money. 1947. *Columbia.*

NEWTON BELMONT PARKER, B.A., Harvard, 1929; M.A., 1944. The Bank of Brazil. *Harvard.*

ANNA JACOBSON SCHWARTZ, B.A., Barnard, 1934; M.A., Columbia, 1935. State banking before the Civil War; a study of Pennsylvania banking. 1947. *Columbia.*

RICHARD TULOSS STEVENS, B.A., Ohio State, 1926; M.A., 1931. Economic implications of the changing character of bank assets. 1947. *Ohio State.*

ROBERT C. WEEMS, B.S., Mississippi State, 1931; M.B.A., Northwestern, 1934. The Bank of the State of Mississippi, 1809–1834. 1947. *Columbia.*

International Trade, Finance and Economic Policy

Degrees Conferred

JOHN HANS ADLER, Ph.D., Yale, 1946. Determinants of the volume of foreign trade of the United States, 1920–1938.

GEORGE HAY BROWN, Ph.D., Chicago, 1945. The international economic position of New Zealand. (Published by Journal of Business, Studies in Business Administration, Vol. XVI, Nos. 1 and 2, April, 1946.)

GEORGE HUDDLESTON FAUST, Ph.D., Chicago, 1946. Economic relations of the United States and Colombia, 1920–40.

JOHN FREDERICK GARDNER, Ph.D., Pittsburgh, 1946. The lend-lease program of World War II; analysis and appraisal.

ANTHONY YING CHANG KOO, Ph.D., Harvard, 1946. Studies in the theory of exchange equilibrium.

WALTER KRAUSE, Ph.D., Harvard, 1946. Regional shifts in industry.

YVES ROBERT MARONI, Ph.D., Harvard, 1946. The theory of international trade under monopolistic competition.

NICHOLAS MICHAEL PETRUZZELLI, Ph.D., Catholic, 1946. Some technical aspects of foreign trade statistics with special reference to valuation. (Published by Catholic Univ. of America Press.)

LAURENCE JOSEPH DE RYCKE, Ph.D., California. The significance of the important supplier principle as applied in the negotiation of reciprocal trade agreement concessions.

SAMUEL SAUL SHIPMAN, Com. Sci. D., New York, 1946. The outlook for Soviet-American economic relations.

PAUL ANTHONY VOLPE, Ph.D., Catholic, 1946. The international monetary and banking crisis of 1931. (Published by Catholic Univ. of America Press.)

Thesis Completed and Accepted

Clinton Wilson Randle, B.A., Duke, 1931; M.A., 1938. United States trade with Latin America. 1946. *Kentucky.*

Theses in Preparation

Martin Aylmer Bitz, B.A., Saskatchewan, 1943; M.A., Toronto, 1944. Some aspects of Canadian foreign trade. *Toronto.*

James Christopher, B.A., Chicago, 1944; M.A., 1945. American aid to Japanese aggression. 1946. *Chicago.*

Alvin E. Coons, B.A., Iowa, 1932; M.S., Iowa State, 1939. Certain conflicts in United States agricultural and foreign trade policies. 1946. *Iowa State.*

Alexander Eckstein, B.S., California, 1939; M.S., 1941. Development of economic relations between the U.S.S.R. and the countries of eastern and central Europe. 1947. *California.*

Hugh Kyle Hawk, B.A., Birmingham-Southern, 1941; M.A., Virginia, 1943. Economic aspects of British foreign trade policy, 1840–1885. 1947. *Virginia.*

Kuang Tai Hu, B.Com., Nankai, 1939; M.B.A., Harvard, 1943; M.A., 1944; Ph.M., Wisconsin, 1941. International economic problems of China. 1947. *Harvard.*

George Rosen, B.A., Brooklyn, 1940; M.A., Princeton, 1942. Effect of the industrialization of undeveloped countries upon the economic position of the United States. 1947. *Princeton.*

John W. Simpson, B.A., Ohio State, 1927; M.A., 1935. Balance of international payments, 1900–1947. 1947. *Ohio State.*

Sydney Meyer Spielvogel, B.S., College of City of New York, 1944; M.A., Harvard, 1946. Balance of payments mechanism of raw material producing countries. *Harvard.*

Emil G. Spitzer, Jur.D., Vienna, 1927; M.A., Harvard, 1943. The effect of synthetic production on world trade in basic raw materials. 1946. *Harvard.*

Mother Dean Elizabeth Traynor, R.S.C.J., B.A., Barat, 1937; M.A., Marquette, 1942. International monetary and financial conferences, 1900–1945. 1946. *Catholic.*

Sech-Chau Wong, B.S.C., National Chi-nan University; M.A., Michigan, 1941. China as an outlet for American capital. 1947. *New York.*

Chee Hsien Wu, M.A., Wisconsin, 1945; M.A., Harvard, 1946. Russia's foreign trade and her economic development, 1917–1941. 1947. *Harvard.*

Yung-Shun Wu, B.A., Customs College, China, 1935; M.A., Wisconsin, 1943. Economic effects of the wool tariff in the United States. 1946. *Wisconsin.*

Business Finance; Insurance; Investments; Securities Markets

Degrees Conferred

Sidney Stuart Alexander, Ph.D., Harvard, 1946. Financial structure of American corporations since 1900.

Orson Hart, Ph.D., Yale, 1946. Life insurance investments in bonds and stocks, 1929–1944.

Chen Ting, Ph.D., Harvard, 1946. Industrialization, capital formation and internal savings.

Willard B. Van Houten, Ph.D., Yale, 1946. Preferred stocks of United States railroads as investments.

Thesis Completed and Accepted

Joel B. Dirlam, B.A., Yale, 1936. Regulations of security issues under the Public Utility Holding Company Act. *Yale.*

Theses in Preparation

Albert H. Dehner, B.S., Ohio State, 1936; M.B.A., 1939. Relation of the speed of stock market movements and the extent of fluctuations in stock prices. 1948. *Ohio State.*

Sergei Pavlovitch Dobrovolsky, Dipl., Harbin, 1930; M.A., Columbia, 1942. Retention of corporate earnings. 1948. *Columbia.*

JACOB OSWALD KAMM, B.A., Baldwin-Wallace, 1940; M.A., Brown, 1942. Theory of stock market operations; national and international. 1947. *Ohio State.*

LEONARD KENT, B.S., Georgia Teachers, 1935; M.B.A., Chicago, 1940. Effects of inheritance tax on the pattern of investment. 1946. *Chicago.*

ARTHUR F. MESSENGER, B.A., Ohio Wesleyan. Liquidity in the security markets. 1947. *Ohio State.*

PING-HOU-WANG, B.A., Tsing-hua, 1932; M.A., Columbia, 1941. Fair return on equity capital. 1947. *Columbia.*

SAMUEL AUSTIN REEP, B.B.A., Minnesota, 1935; M.A., 1940. The investment company as an agency for financing new business enterprise: a case study. 1946. *Chicago.*

HENG-KANG SANG, B.A., Tsinghua, China, 1939; M.A., Nankai, 1943; M.A., Harvard, 1946. The mechanism of capital formation. 1947. *Harvard.*

VIRGIL SCHARRER, B.A., De Pauw, 1935; M.A., Chicago, 1944. Investment outlay, profit, and the rate of capital growth. 1947. *Chicago.*

MU PIN YEN, B.A., Nankai, 1938; M.A., Michigan, 1939. The role of development loan in post-war industrialization. 1946. *Harvard.*

Public Control of Business; Public Administration; National Defense and War

Degree Conferred

IRWIN RANDOLPH HEDGES, Ph.D., Wisconsin, 1946. Price control of dairy products during World War II.

Theses in Preparation

KARL A. BOEDECKER, Ph.B., Wisconsin, 1937; M.A., 1940. A critical appraisal of the anti-trust policy of the United States government 1933–1945. 1947. *Wisconsin.*

GUSTAV DREWS, LL.B., Brooklyn Law, 1917; J.D., 1932; M.A., New York, 1941. The position of the patent right in a national economy. 1947. *New York.*

GEORGE CHARLES GROSSCUP, JR., B.A., Beloit, 1937; M.A., Miami, 1940. Wartime food subsidies. 1946. *Wisconsin.*

RALPH CARL HOEBER, B.A., Oregon, 1921; M.A., 1923; J.D., Stanford, 1927. Development of public utility regulation in Oregon. 1947. *Wisconsin.*

JOHN MAY, B.S., Missouri, 1934; M.A., 1939. Standards and patterns of economic control—Federal Trade Commission. 1947. *Pittsburgh.*

MELVILLE J. ULMER, B.S., New York, 1937; M.A., 1938. Free enterprise and price control. 1947. *Columbia.*

Industrial Organization; Price and Production Policies; Business Methods

Degree Conferred

Charlotte Feldman Muller, Ph.D., Columbia, 1946. Light metals monopoly. (Published as No. 519, Columbia Studies in History, Economics and Public Law.)

Theses Completed and Accepted

CLIFFORD ANDREW CARROLL, S.J., B.A., Gonzaga, 1933; M.A., 1934. Competition in the restaurant business in Seattle, Washington. 1947. *St. Louis.*

RICHARD B. TENNANT, B.A., Yale, 1937. The American cigarette industry, 1927–1938; an analysis of market behaviour. *Yale.*

Theses in Preparation

FRANCIS A. BABIONE, B.S., Miami, 1931; M.B.A., Ohio State, 1932. The leasing of industrial equipment. 1947. *Ohio State.*

WINN FINNER, B.S., Wisconsin, 1934; M.S., 1935. The dry skim milk industry and marketing agreement. 1947. *Wisconsin.*

MORRIS FORKOSCH, LL.B., St. John's 1930; LL.M., 1932; B.A., New York, 1936; M.A., 1938. The liquor industry. 1947. *New York.*

CHARLES H. HESSION, B.A., College of City of New York, 1932; M.A., Columbia, 1933. The economics of the food container industry. 1947. *Columbia.*

RIDGEWAY HOEGSTEDT, B.A., California, 1929; M.A., 1933. Cost of production and price policy. 1947. *Columbia.*

HARRIET JANE HOLMES, B.A., Vassar, 1938; M.A., Radcliffe, 1945. Financial aspects of the Massachusetts woolen industry. *Harvard.*

VEN-TAI HSU, B.S., Fuh-Tan University, 1926; LL.B., Shanghai College of Law, 1933; M.A., New York, 1937. Economics of sheetglass industry. 1947. *New York.*

EVAN OWEN ROBERTS, B.A., Wisconsin, 1929; M.A., 1938. Modern industrial purchasing: its practice and economic implications. 1946. *Wisconsin.*

KENNETH M. SPANG, B.A., Dartmouth, 1933; M.A., Columbia, 1936. Price making in the New York milk shed. 1947. *Columbia.*

VIRGINIA GALBRAITH TAUCHAR, B.A., California, 1941. The implications of war activity on technological productivity and economic progress. 1948. *California.*

STANLEY SZU-YEE TSOU, B.S., California; M.A., Harvard, 1946. The world tea industry and China. *Harvard.*

HAROLD GOODHUE VATTER, B.A., Wisconsin, 1936; M.A., Columbia, 1938. The changing position of small enterprise. 1948. *California.*

Marketing; Domestic Trade

Degree Conferred

RICHARD L. D. MORSE, Ph.D., Iowa State, 1946. Egg grading and consumers' preferences with special reference to Iowa egg marketing.

Theses in Preparation

RICHARD MELTON ALT, B.A., Harvard, 1932; M.A., 1940. Department store price policies. 1946. *Harvard.*

R. G. BRESSLER, JR., M.S., Connecticut, 1936. Efficiency of milk distribution. 1946. *Harvard.*

CARL CLARK, B.S., Oklahoma Agricultural and Mechanical, 1928; M.S., 1929. The marketing of tobacco through the loose leaf auction system. 1947. *Wisconsin.*

JAMES S. CROSS, B.A. and M.A., Pennsylvania State, 1940. A study of the mercantile credit structure and its function as purchasing power. 1947. *Ohio State.*

JAMES H. DAVIS, B.S., Missouri, 1938; M.B.A., Ohio State, 1940. An analysis of the job of the service wholesale drug salesmen. 1947. *Ohio State.*

ALBERT FISHER, B.A., Oberlin, 1939; M.B.A., Ohio State, 1940. Wholesale drug warehouse layout and order handling procedures. 1947. *Ohio State.*

HAROLD E. HARDY, B.A., Pomona, 1925. The integration of manufacturing and chain-store distribution. 1946. *Minnesota.*

LELAND ELMER HESS, B.A., Ripon, 1938; M.A., Chicago, 1940. Mail order business. 1946. *Chicago.*

ROY WILLIAM JASTRAM, B.A., Stanford, 1936. Some economic aspects of large scale advertising. 1946. *Stanford.*

ISRAEL RAY KOSLOFF, B.A., Chicago, 1943; M.A., 1945. Gasoline marketing in Minnesota. 1946. *Chicago.*

LEWIS F. MANHART, B.S., Bowling Green State, 1929; M.A., Ohio State, 1936. Department store credit management—a case study of the La Salle and Koch Company, Toledo, Ohio. 1947. *Ohio State.*

F. BYERS MILLER, B.S., Baldwin Wallace, 1934; M.B.A., Ohio State, 1940. Marketing of prescription ware. 1947. *Ohio State.*

SCHUYLER F. OTTESON, Ph.B., Wisconsin, 1939; M.B.A., Northwestern, 1940. Market research techniques. 1947. *Ohio State.*

RALPH W. SHERMAN, B.S., Ohio State, 1929; M.S., 1932. Development of the cold storage locker industry in Ohio. 1947. *Ohio State.*

FREDERICK W. SHORT, B.A., MacMasters, 1943; M.S., Minnesota, 1944. Marketing of fruit with special reference to the Niagara peninsula. 1947. *Minnesota.*

MINNIE B. TRACEY, B.A., Michigan, 1924; M.S., Denver, 1935. The marketing of frozen food products. 1947. *Ohio State.*

ROBERT W. TWYMAN, B.A., Indiana, 1940; M.A., Chicago, 1942. A history of Marshall Field and Company. 1946. *Chicago.*

FRANCIS A. WINGATE, B.A., Bowdoin, 1931; M.B.A., Harvard, 1933. Principles and methods of price determination in retailing. 1948. *Ohio State.*

Mining; Manufacturing; Construction

Thesis Completed and Accepted

HAROLD GREGG LEWIS, B.A., Chicago, 1936. Studies in the elasticity of demand for steel. 1946. *Chicago.*

Theses in Preparation

ARTHUR AARON BRIGHT, JR., B.A., Dartmouth, 1939; C.S.M., 1940; M.A., Chicago, 1942. Technological change and the electric lamp industry. 1946. *Chicago.*

WILLIAM BYRAM GATES, JR., B.A., Williams, 1939. An economic history of the Michigan copper mining industry. 1946. *Chicago.*

ROBERT GROSSE, B.A., 1944, Columbia; M.A., 1946, Harvard. Determinants of size of firms in iron and steel industry 1790. *Harvard.*

GEORGE HENRY HOBART, B.A., Michigan, 1908; M.A., North Carolina, 1941. The pottery industry in the United States. 1947. *North Carolina.*

MARTHA CRAMPTON HOWARD, B.A., Goucher, 1934; M.A., Radcliffe, 1936. History of the margarine industry. 1948. *Columbia.*

HAROLD EMERSON KLONTZ, B.A., Berea, 1935. The furniture industry in the South. 1947. *North Carolina.*

MILTON LIPTON, B.A., Rutgers, 1939. Statistical analysis of construction activity in San Francisco, 1906–1946. 1947. *Stanford.*

OSCAR WARREN MAIN, B.A., McMaster, 1938; M.A., Toronto, 1945. The steel industry of Canada. *Toronto.*

DON PATINKIN, B.A., Chicago, 1943; M.A., 1945. Models of manufacturing in the United States. 1947. *Chicago.*

MAYNARD A. PECK, B.A., Bethany, 1930; M.A., Nebraska, 1934. Some economic aspects of the coal industry in Boulder county, Colorado. 1947. *Colorado.*

SAMI SEMSIDDIN TEKINER, M.A., Cornell, 1941. An econometric study of employment, investment and output in United States manufacturing, 1920–41. 1946. *Chicago.*

DANIEL CARLSON VANDERMEULEN, B.A., Hamilton, 1936; M.A., Harvard, 1946. Technological change in the paper industry—introduction of the sulphate process. 1946. *Harvard.*

Transportation; Communication; Public Utilities

Degrees Conferred

DAVID W. BUSSELL, Ph.D., Ohio State, 1946. Truck transportation of liquid petroleum products in bulk.

MERRILL DEVOE, Ph.D., Ohio State, 1946. Business and economic problems of the local radio station.

JACOB MARTIN GOULD, Ph.D., Columbia, 1946. Output and productivity in electric and gas utilities, 1899–1942.

JAMES GARNETT LYNE, Ph.D., New York, 1946. The need of the railways for additional fixed-plant capital and possible means of its attainment.

CHANGNI YOUNG, Ph.D., Harvard, 1946. The Market Street railway system in San Francisco.

Theses in Preparation

Paul Laurell Ambelang, B.A., Illinois, 1928; M.A., Catholic, 1942. A history of employment on railways of the United States to 1945. *Catholic.*

Mary Ray Burns, B.A., Minnesota, 1916. A comparative study of four recent railroad reorganizations: Great Western, Milwaukee, North Western and Soo Line. 1947. *Minnesota.*

John P. Carter, B.A., Columbia, 1936. Transportation rates and their relation to the location of production. 1947. *California.*

James Edmond Collins, B.A., Syracuse, 1940. Cost conditions in air transportation. 1947. *Stanford.*

Hyman Howard Goldin, B.A., 1936, Harvard; M.A., 1946. Western Union, the biography of a public utility. *Harvard.*

Jay Gordon Hall, B.A., Western Ontario, 1934; M.A., Chicago, 1944. A history of the automobile and of new highways in Latin America. 1946. *Chicago.*

Paul L. Howell, B.B.A., Washington, 1931; M.A., Harvard, 1942. Federal regulation of utility finance. 1947. *Harvard.*

Edwin Hughes, B.A., Williams, 1919; M.A., 1934. The St. Paul organization. 1947. *Columbia.*

Edward Watson, B.A., Princeton, 1936; M.A., Harvard, 1941. Railroad reorganization. 1947. *Harvard.*

Agriculture; Forestry; Fisheries

Degrees Conferred

Raleigh Barlowe, Ph.D., Wisconsin, 1946. The Wisconsin forest crop law: an appraisal and evaluation.

James Reginald Bowring, Ph.D., Iowa State, 1945. Nutritional problems in relation to agriculture in Canada.

Pei-kang Chang, Ph.D., Harvard, 1946. Agriculture and industrialization: an inquiry into the adjustments between agriculture and industry in the process of industrialization.

William Haldo Fisher, Ph.D., Virginia, 1946. An economic investigation of the dairy industry in the Fifth Federal Reserve District. (Published by the Federal Reserve Bank of Richmond, Virginia.)

Arthur Theodore Mosher, Ph.D., Chicago, 1946. The economic effects of Hindu religion and social traditions on agricultural production by Christians in North India.

Morgan Columbus Rochester, Ph.D., Wisconsin, 1946. Landlord-tenant relationships in the share-cropper system in South Carolina.

Leonard A. Salter, Jr., Ph.D., *post obitum*, Minnesota, 1946. A critical review of research in land economics.

Ben H. Thibodeaux, Ph.D., Harvard, 1946. An economic study of agriculture in Bolivia.

John Francis Timmons, Ph.D., Wisconsin, 1946. Economic and social aspects of the devaluation of agricultural land through inheritance, gift and will.

Eliot Otto Waples, Ph.D., Wisconsin, 1946. Farm ownership processes in a low tenancy area: a study of the use and distribution of family capital to achieve owner-operatorship and retirement security.

Ramey C. Whitney, Ph.D., Minnesota, 1946. Farm income, investment and value of farm land in Missouri.

Thesis Completed and Accepted

Charles Felder Reynolds, Jr., B.S., Mississippi State, 1939; M.A., Virginia, 1942. Changes in the agricultural economy of the Yazoo-Mississippi delta. 1946. *Virginia.*

Theses in Preparation

Gordon L. Burton, B.A., Alberta, 1937; M.A., 1940. Economic elements of a price policy for Canadian agriculture. 1946. *Iowa State.*

Gerald Engelman, B.S., Iowa State, 1937. Problems involved in the sale of slaughter livestock on the basis of carcass weight and grade. 1947. *Minnesota.*

GRADY BLUHM GROWE, B.S., Georgia, 1939. Interregional competition in peanut production. 1947. *Virginia.*

R. C. HEADINGTON, B.A., Kenyon, 1937; M.Sc., Ohio State, 1938. Keeping the farm in the family. 1948. *Ohio State.*

CLIFFORD G. HILDRETH, B.A., Kansas, 1939; M.S., Iowa State, 1941. Production functions for Iowa agriculture. 1947. *Iowa State.*

HASTINGS DUDLEY HUGGINS, M.S., Cornell, 1933; M.A., Harvard, 1946. Initiation and organization of economic research program in British Guiana. *Harvard.*

HERMAN BROOKS JAMES, B.S., North Carolina State, 1932; M.S., 1940. Mechanization problems in eastern North Carolina agriculture. 1947. *Duke.*

JAMES WILEY KNOWLES, B.S.S., College of City of New York, 1936. Economic criteria in the design and evaluation of farm policy. 1947. *Columbia.*

IVAN M. LEE, B.S., Iowa State, 1941. Economic implications of the mobility of the human resource in agriculture. 1947. *Iowa State.*

JAMES H. LORIE, B.A., Cornell, 1942; M.A., 1945. The relationship by regions between feed production and consumption and livestock production in the United States. 1946. *Chicago.*

JAMES E. MCNULTY, JR., B.A., Harvard, 1944; M.A., 1945. The relation of agricultural credit and land tenure in American agriculture. 1946. *Harvard.*

WILLIAM LIDDON MCPETERS, B.A., Vanderbilt, 1943; M.A., Harvard, 1945. Role of credit in the improvement and conversion of southern agriculture. 1947. *Harvard.*

DELBERT C. MYRICK, B.S., Montana State, 1936. County agricultural planning, Hand County, South Dakota. 1946. *Harvard.*

WEBER PETERSON, B.S., Montana State, 1936; M.S., 1938. Economics of flaxseed production in the United States. 1947. *Minnesota.*

RICHARD POWERS, B.S., Virginia, 1944; M.A., 1945. American farm policy: 1938–1945. 1947. *Virginia.*

LEONARD H. SCHOFF, B.A., Harvard, 1904; M.A., 1905. One farm or two: a statistical survey of the requirements of mechanized farming. 1946. *Columbia.*

RICHARD SIELAFF, M.S., Minnesota, 1944. Competition of agricultural fibers. 1947. *Minnesota.*

SOLOMON SINCLAIR, B.S.A., Saskatchewan, 1932; M.S., 1937. The role of subsidies in farm credit. 1947. *Minnesota.*

GEORGE E. TOBEN, B.S., Illinois, 1936; M.S., 1938. An analysis of machinery costs on farms in southeastern Minnesota. 1947. *Minnesota.*

CHIEH TSIANG, M.S., Minnesota, 1946. An economic study of some problems of Chinese agriculture. 1947. *Minnesota.*

Economic Geography; Regional Planning; Urban Land; Housing

Degree Conferred

MALCOLM CARTER MCFARLAND, Ph.D., Georgetown, 1946. An economic analysis of Title I of the National Housing Act.

Thesis Completed and Accepted

ARMAND PETER RUDERMAN, B.S., Harvard, 1943; M.B.A., Chicago, 1944; M.A., Harvard, 1946. A study of American low-cost housing problems with special emphasis on rural areas. *Harvard.*

Theses in Preparation

WILLIAM PAUL BRANN, B.A., Arkansas State, 1938; M.A., Virginia, 1942. The relation of agriculture to industry in Arkansas. 1946. *Virginia.*

LEWIS EDWARD KNOLLMEYER, B.A., Yale, 1930; M.A., Wisconsin, 1939. Housing as an outlet for investment. 1946. *Wisconsin.*

WILLIAM EDWARD MANN, B.A., Toronto, 1942; M.A., 1943. The Carrot River community. *Toronto.*

LEONARD SOLOMN SILK, B.A., Wisconsin, 1940. Swedish housing planning. 1947. *Duke.*

Labor and Industrial Relations

Degrees Conferred

DANIEL JOSEPH AHEARN, Ph.D., Columbia, 1945. The wages of farm and factory. (Published as No. 518, The Columbia Studies in History, Economics, and Public Law.)

GORDON FALK BLOOM, Ph.D., Harvard, 1946. Unions and technological progress.

GEORGE HENRY HAINES, Ph.D., Clark, 1946. History of the Virginia State Federation of Labor, 1895–1944.

LANGSTON THACKER HAWLEY, Ph.D., North Carolina, 1946. An analysis of wage standardization.

CHARLES EDWARD LINDBLOM, Ph.D., Chicago, 1945. Some aspects of the interrelationships between labor unions and the competitive price system.

WILLIAM JOHN PHILLIPS, JR., Ph.D., New York, 1946. A theory of union growth.

SISTER MARY YOLANDE SCHULTE, O.S.F., Ph.D., Catholic, 1945. Wage theories in the fair labor standards act. (Published by Catholic University of America Press.)

VIOLA WYCKOFF, Ph.D., Columbia, 1946. The public works wage rate and some of its economic effects. (Published as No. 521 in the Columbia Studies in History, Economics, and Public Law.)

Theses Completed and Accepted

RUTH G. GILBERT, B.A., Wooster, 1943. An analysis of the scope of private industrial arbitration. 1946. *Massachusetts Institute of Technology.*

EDITHA HADCOCK, B.A., Mt. Holyoke, 1927; M.A., Brown, 1931. Labor problems in the Rhode Island cotton mills from 1790 to 1940. *Brown.*

FINN THEODORE MALM, B.S., California, 1941. A case study in industrial unionism. 1946. *Massachusetts Institute of Technology.*

Theses in Preparation

ROBERT J. ALEXANDER, B.A., Columbia, 1940; M.A., 1941. Collective bargaining in Chile. 1948. *Columbia.*

ARTHUR GARWOOD ASHBROOK, JR., B.S., Haverford, 1941. A federal labor policy consistent with full employment. 1947. *Massachusetts Institute of Technology.*

ROBERT SCOTT BOWERS, B.A., Kansas Wesleyan, 1933; M.A., American, 1938. The labor policies of the National Association of Manufacturers. 1947. *Wisconsin.*

PAUL BRINKER, B.A., Pennsylvania State, 1939; M.A., 1940. The National Labor Relations Act—a study of the Act and its enforcement with particular reference to the work of the 10th region's office in Atlanta. 1947. *Vermont.*

HENRY THEODORE BUECHEL, B.A., Washington State, 1929; M.A., 1937. Compulsory arbitration in Australia. *Wisconsin.*

JEROME B. COHEN, B.S.S., College of City of New York, 1934; M.A., Columbia, 1935. Concept of unemployment. 1947. *Columbia.*

DORIS DUFFY, B.A., Notre Dame of Maryland, 1939; M.A., Catholic, 1940. The role of government in labor-management production committees. *Catholic.*

ENNIS KINGMAN EBERHART, B.A., Simpson, 1928; M.A., Columbia, 1929. The job opportunities of racial minorities in America. 1947. *Wisconsin.*

REV. WILLIAM JOSEPH GORDON, O.S.A., B.A., Villanova, 1941; M.A., Catholic, 1944. Some state labor relations acts in operation. 1946. *Catholic.*

HERBERT GERHARD HENEMAN, B.B.A., Minnesota, 1938; M.A., 1943. Family participation in the labor force. 1947. *Minnesota.*

THOMAS ELFRED HOGAN, B.A., Washington, 1938; M.A., 1940. The wage policy of the National War Labor Board. 1947. *Wisconsin.*

JOHN JEUCK, B.A., Chicago, 1937; M.B.A., 1938. Profit sharing: a case study of Sears Roebuck and Company. 1946. *Chicago.*

CHARLES CLINTON KILLINGSWORTH, B.A., Southwest Missouri State, 1938; M.A., Oklahoma Agricultural and Mechanical, 1939. State labor relations legislation. 1946. *Wisconsin.*

William Henry Knowles, B.S., Iowa State, 1940; Ph.M., Wisconsin, 1942. Labor and efficiency—the newer phase. 1947. *Wisconsin.*

Juanita Morris Kreps, B.A., Berea, 1942; M.A., Duke, 1944. The history and analysis of organized labor's legislative and political activities, 1930–1946. 1947. *Duke.*

David Levinson, B.A., Scranton, 1942; M.A., Syracuse, 1943. The unionization of supervisory and technical employees. 1947. *Wisconsin.*

Thomas Joseph McDonagh, C.S.C., Ph.B., Gregorian, Rome, 1939; M.A., Wisconsin, 1945. The Catholic social viewpoint in the labor movement. 1947. *Wisconsin.*

Arthur E. Mace, Jr., B.A., Amherst, 1938. Economics of wage differentials. 1947. *Chicago.*

Martha Jane Marshall, B.A., Chicago, 1939; M.A., 1945. Guaranteed annual wages. 1947. *Chicago.*

John F. Mee, B.A., Miami, 1930; M.A., Maine, 1933. Contributions of personnel developments in the ATC to the science of personnel management. 1947. *Ohio State.*

Thomas Edward Posey, B.A., Syracuse, 1923; M.A., 1925. The history of the labor movement of West Virginia. 1947. *Wisconsin.*

Robert White Pullen, B.A., Colby, 1941. The effects on collective bargaining of unfair labor practice cases under the Wagner Act. 1947. *Massachusetts Institute of Technology.*

Rev. Charles B. Quirk, B.A., Providence, 1930; M.A., Catholic, 1944. The origin and development of the U. S. Employment Service in Rhode Island. 1947. *Columbia.*

Dwight E. Robinson, B.A., Yale, 1936; B.A., Oxford, 1941. The managerial prerogative. 1948. *Columbia.*

Mae Katzen Salzer, B.A., Brooklyn, 1934; M.A., Columbia, 1935. The hours question. 1947. *Columbia.*

Myrna Siegendorf, B.A., New Jersey College for Women, 1939; M.A., Wisconsin, 1940. The Montgomery Ward case; microcosm of industrial conflict. 1946. *Wisconsin.*

David Kenneth Spiegel, B.S., New York, 1939; M.A., 1940. The administration of minimum wage legislation. 1947. *New York.*

Benjamin Solomon Stephansky, B.A., Wisconsin, 1939; M.A., 1942. The effect of government agencies on the internal processes of the labor movement. 1947. *Wisconsin.*

Robert Tannenbaum, B.A., Chicago, 1937; M.B.A., 1938. The area of managerial discretion —with reference to selected management-union problems. 1946. *Chicago.*

John Gudert Turnbull, B.A., Denison, 1938. Management, labor and the concept of control: a study of management functions and union policies. 1947. *Massachusetts Institute of Technology.*

Vidkuun Eugen Ulriksson, B.S., Minnesota, 1937; M.A., 1943. The history of the labor relations of the American commercial telegraph industry. 1947. *Wisconsin.*

Leo Weitz, B.S.S., College of City of New York, 1928; M.A., Columbia, 1932. The role of the intellectuals in the American labor movement, 1865–1944. 1947. *Columbia.*

Fred Witney, M.A., Illinois, 1941. Wartime experiences of the National Labor Relations Board, 1941–45. *Illinois.*

Hugh Edwin Young, B.S., Maine, 1940; M.A., 1942. The role of leadership in American labor history. 1947. *Wisconsin.*

Social Insurance; Relief; Pensions; Public Welfare

Degrees Awarded

Helen Elizabeth Martz, Ph.D., Bryn Mawr, 1946. Use of County Boards in the administration of public assistance: a case study of County Board administration of assistance.

Christine Newark, Ph.D., Iowa State, 1945. Certain medical and allied health services with special application to rural communities in Iowa.

Daniel Scheinman, Ph.D., Chicago, 1945. Central *versus* local responsibility for unemployment relief.

Theses in Preparation

Louis Hoffer, B.A., College of City of New York, 1930; M.A., Columbia, 1932. Unemployment compensation and seasonal variations in employment in New York State. 1947. *New York.*

Elizabeth Harwell Jackson, B.A., Swarthmore; M.A., Harvard, 1945. Unemployment and disability in Puerto Rico. *Harvard.*

George Mason Keith, B.A., Wisconsin, 1924; M.A., 1931. Economics of old age assistance as exemplified by the experience in Wisconsin. 1947. *Wisconsin.*

Arthur Hallam Reede, B.A., Pennsylvania State, 1931; M.A., 1932. The Italian system of family allowance. 1947. *Columbia.*

Isidore Singer, B.S., College of City of New York, 1940; M.A., Brooklyn, 1942. The social insurance system of Mexico. 1947. *New York.*

Consumption; Coöperation

Theses in Preparation

Donald Albert Schwartz, B.S., Minnesota State Teachers, 1933; Ph.M., Wisconsin, 1943. Consumers' cooperatives in the evolving economic structure of America. 1946. *Wisconsin.*

Henry Holdship Ware, B.A., Pomona, 1932; M.A., Columbia, 1929. The Soviet consumer; a theoretical approach to the problem of consumer satisfaction under the Soviet set-up. 1947. *Columbia.*

Population; Migration; Vital Statistics

Degree Conferred

Edward Buchanan Williams, Ph.D., Columbia, 1946. Negro migration in four selected counties of the southeastern region of the United States.

Thesis in Preparation

Thomas Murphy, B.S., New York, 1934; M.A., 1937. Cycles in diseases. 1947. *New York.*

VACANCIES AND APPLICATIONS

The Association is glad to render service to applicants who wish to make known their availability for positions in the field of economics and to administrative officers of colleges and universities and to others who are seeking to fill vacancies.

The officers of the Association take no responsibility for making a selection among the applicants or following up the results. The Secretary's Office will merely afford a central point for clearing inquiries; and the *Review* will publish in this section brief descriptions of vacancies announced and of applications made. It is optional with those submitting such announcements to publish name and address or to use a key number.

Communications should be addressed to: The Secretary, American Economic Association, Northwestern University, Evanston, Illinois.

Vacancies

Motor transportation, industrial development, finance: Collegiate institute of technology desires applications from men under 35 with college teaching experience in transportation and finance. Position is 12 months a year. P115

Opening in economics in junior college: Man; under 35, Ph.D. preferred; minor work in related social sciences; experience desirable; around $3,000 per 37 weeks; 2-year guarantee, with promise of permanent tenure for right man and maximum salary of $4,150 after eight years of service. Write to P. Masiko, 6020 West Addison Street, Chicago 34, Illinois.

Teachers Available

Elementary economics, South American economy, postwar problems, cartels and corporations: Doctor of Law and Economics. Author of various books and opinions; member and honorary member of scientific societies; lecturing experience in the United States and abroad. Desires teaching or research position in or near New York or Washington; also part-time or advisory work or summer lecture work at a university. E195

Economic history, money and banking, world economy: Man, 53, Ph.D., University of Berlin. American citizen. Widely traveled. Experience in international trade and the German agricultural co-operative movement. Since coming to this country, 7 years of college teaching (5 years at a denominational university). For last 3 years in government service as economic analyst with the regional office of a "long-term" agency. Author of several books (two or which were published in America) and numerous papers. Extensive research on American banking history near completion. Expects to leave government service in 1946 and desires adequate teaching appointment. E213

Labor problems, industrial relations, economic history, general economics: Man, 31, M.A., completing Ph.D., Columbia University. Three years of Army statistical control work. Available immediately. E214

International trade and finance, commercial policy, inter-American relations, money and banking, economic theory: Man, 42, married, Ph.D., University of Wisconsin. Eleven years of college teaching in economics; publications; presently in government but desires to return to university or college teaching. Available in September, 1946. E218

Theory, money and banking, public control of business, postwar problems: Man, 53, married, Doctor of Law and Political Science, University of Vienna. More than 5 years of economics teaching at a New York college; publications; 20 years of European experience as bank executive, writer on government economic policy, and economics teacher. Desires university or college position. Available immediately. E220

Theory, public finance, public control of business, agricultural economics, business cycles: Man, 29, B.A., 1941, M.A., 1945. Five years of government research experience in analysis of major trends; 1 semester of teaching experience; publications. Desires teaching or research position. Available in September, 1946. E224

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